FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

Member

JULY, 1942

Vol. 95, No. 7

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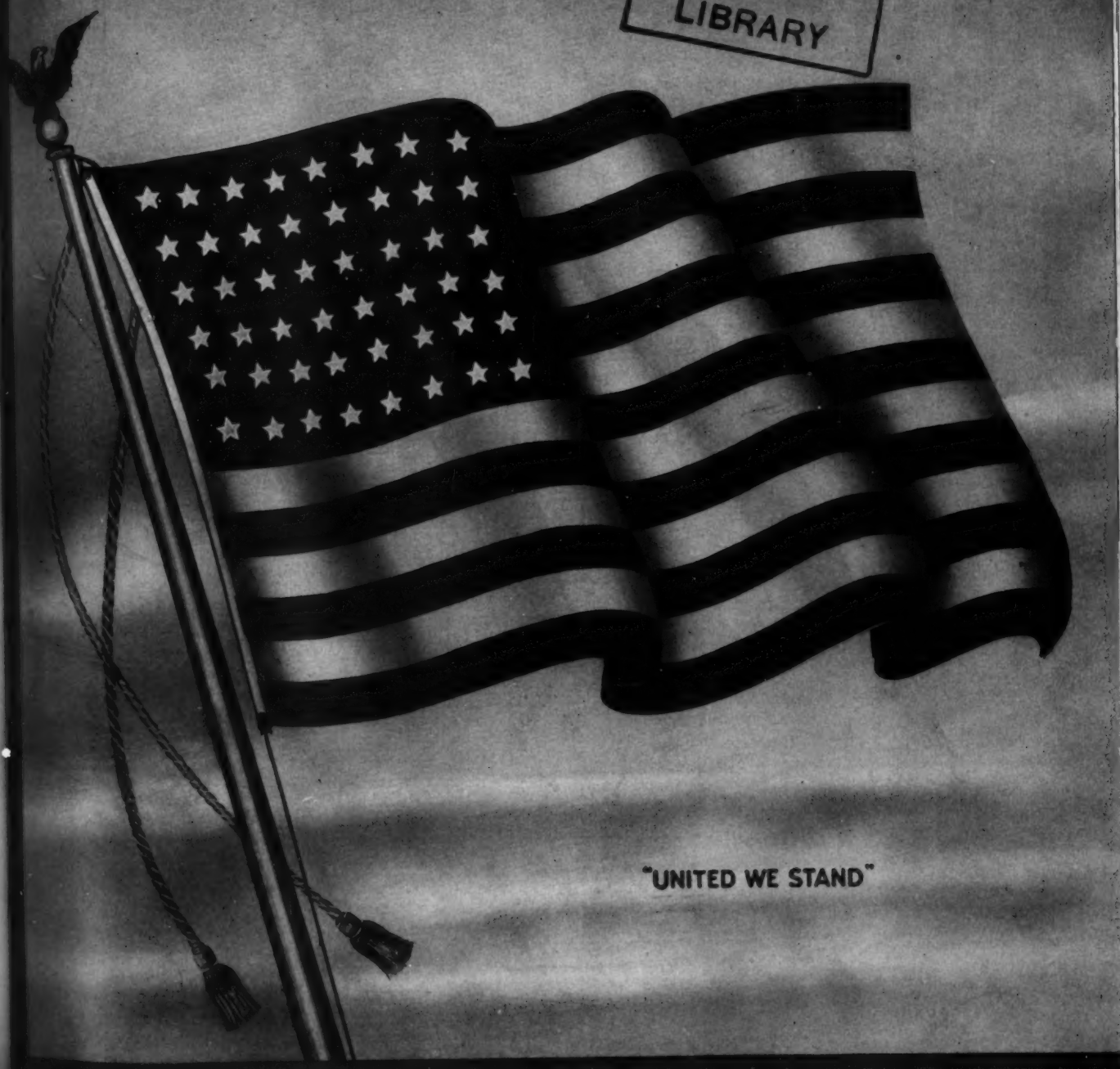


"UNITED WE STAND"

A CASE SHEPPERD MANN PUBLICATION

GAMEWELL

FIRE ALARM SYSTEMS

For Emergency Signaling

The Municipal Fire Alarm Box, Three-fold type.

Alarms initiated by these boxes instantly energize the fire department. There is no delay after the alarm is given.

THE FIRE DEFENSE IS A NATIONAL DEFENSE

Millions of dollars in property values—materials, equipment, buildings and in some cases human lives—essential to the National Defense Program have within a very recent period been destroyed by Fire. *Delayed Alarms*, according to published reports, contributed in every case to the appalling fire waste.

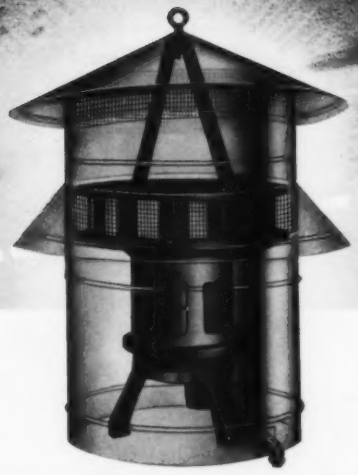
Gamewell fire alarm systems with an adequate distribution of Fire Alarm Boxes at all points of fire hazard provide the means for the elimination of delay and the consequent fire waste.

WE COOPERATE FREELY IN PLANNING FIRE ALARM PROTECTION

THE GAMEWELL COMPANY

NEWTON UPPER FALLS, MASSACHUSETTS

When Bombers Come



FEDERAL

Electric

SIRENS

In bomb-blitzed Britain—proud survivor of countless bombings—air raid practices are no longer a matter of *guess work or personal prejudice.* Significant indeed is the fact that in England as in other war stricken areas more ELECTRIC sirens are in use than all other types combined. Follow the path of tested experience. Make certain YOUR air raid warnings are ELECTRIC. Write for Bulletin No. 68 today. Federal Electric Co., Inc., 8702 S. State St., Chicago, U.S.A.

MANUFACTURED BY FEDERAL ELECTRIC COMPANY, INC. • CHICAGO

BRANCH OFFICES: BOSTON • NEW YORK • PHILADELPHIA • DETROIT • PITTSBURGH • SEATTLE • DALLAS • SAN FRANCISCO • HOUSTON • MINNEAPOLIS • MILWAUKEE • INDIANAPOLIS • LOUISVILLE • ST. LOUIS • NEW ORLEANS

FIRE ENGINEERING

A Consolidation of Fire and Water Engineering, The Fire Engineer and Fire Protection

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FRED SHEPPERD
Editor
N. N. WOLPERT
Assistant Editor

Here it is!

YOU now hold in your hands an example of what can be done by a wide-awake technical journal in serving its field.

●When the International Association of Fire Chiefs announced that it seemed undesirable to hold its annual convention during this war year of 1942, FIRE ENGINEERING promised to provide a Wartime Conference Convention-in-Print issue, with the very type of information that would have been discussed at the convention itself.

●Here it is, between the pages of this issue, and we leave it to you to judge as to whether it does not represent a highly effective yet economical way for you, and you, and you, to participate in this extremely important activity.

The Publishers

FIRE ENGINEERING

The Journal of the Fire Profession since 1877; published on the tenth of each month by Case-Shepperd-Mann Publishing Corp., 24 West 40th Street, New York City, also publishers of *Water Works Engineering, Sewage Works Engineering*, etc. ¶Subscription price U.S. and Latin America, $2 a year; Canada, $2.50; Foreign, $3; Single copies, 25c. ¶Member of Audit Bureau of Circulations and Associated Business Papers, Inc. ¶Entered as second-class matter April 15, 1929, at the Post Office at New York, N. Y., under Act of March 3, 1879. ¶Contents of this issue copyrighted, 1942, by Case-Shepperd-Mann Publishing Corp. ¶KARL M. MANN, President; I. HERBERT CASE, Vice-President and General Manager; ALFRED J. HOUGHTON, Eastern Representative; WM. H. TOPHAM, Circulation Manager; H. S. ESSEX, Production Manager. CHICAGO OFFICE: W. S. CLEVENGER and L. M. ROCHE, 6 No. Michigan Ave.; SAN FRANCISCO: CHARLES H. WOOLLEY, 444 Market Street; LOS ANGELES: AUGUST HAURIN, 6000 Miramonte Blvd. ¶Printed in U.S.A.

CASE-SHEPPERD-MANN PUBLISHING CORPORATION
NEW YORK

"USE A GOOD LADDER OR STAY ON THE GROUND"

DUO Safety

ALL OUT FOR Victory!

★ ★ ★

CHECK YOUR DEPARTMENT TODAY — SEE THAT IT IS PROPERLY EQUIPPED!

Aerial warfare with its incendiary bombs and relentless attacks on civilian areas—should prove a vital lesson for the need of adequate fire protection as a "weapon of defense". Now is the time to seriously consider the emergencies of the future!

ALL OUT FOR SAFETY WITH DUO-SAFETY!

★

COMPLETE LINE OF FAMOUS FIRE FIGHTERS

Listed below is our large line of DUO-Safety Fire Ladders. (Note: Aluminum ladders are not available for the duration.)

★ **TRUSS SERIES—100**
2-section, 3-section, Wall and Roof

★ **SOLID SIDE SERIES—200**
2-section, 3-section, Wall and Roof

★ **SPACE-SAVER SERIES**
Series 150, Series 250, Series 350, Series 450

★ **COMB. STEP AND EXT. SERIES—300**
Solid side and truss type

★ **FOLDING LADDER SERIES—400**
For indoor use—a great space saver

★ **COMPO LINE (WOOD AND ALUMINUM)**
2-section, 3-section, Wall and Roof

★ **TUBULAR RAIL SERIES—500**
2-section, 3-section, 4-section, Wall, Roof and Folding

★ **CHANNEL SERIES—700 (ALL ALUMINUM)**
2-section, 3-section, Wall and Roof

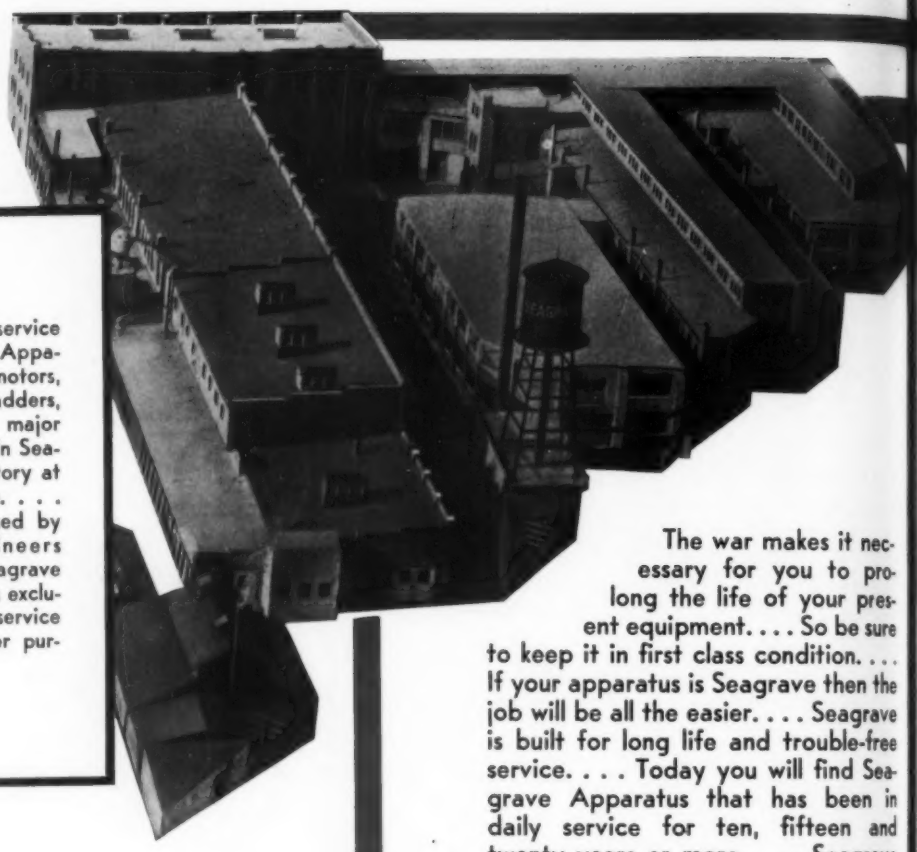
★ **POMPIER LADDERS**
Wood and Aluminum

★ **PIKE POLES**—Triple-thick laminated steel head.

The International Convention has been cancelled this year on account of the war. Fire Departments must be on the "alert" night and day with everything in readiness for any emergency; men, equipment and LADDERS!

Write today for circular 642 on Fire Ladders!

DUO-SAFETY LADDER CORPORATION
[illegible] NINTH STREET — [illegible], WISCONSIN



You get better service from Seagrave Apparatus because motors, pumps, bodies, ladders, chassis and all major parts are made in Seagrave's own factory at Columbus, Ohio. . . . They are designed by Seagrave engineers and built by Seagrave skilled mechanics exclusively for fire service and for no other purpose.

Seagrave has been the recognized leader in the pioneering and developing of fire apparatus for better than half a century.

The war makes it necessary for you to prolong the life of your present equipment. . . . So be sure to keep it in first class condition. . . . If your apparatus is Seagrave then the job will be all the easier. . . . Seagrave is built for long life and trouble-free service. . . . Today you will find Seagrave Apparatus that has been in daily service for ten, fifteen and twenty years or more. . . . Seagrave is made to last.

Seagrave was the first to produce the Automatic Hoist Aerial Ladder Truck; first with the Centrifugal Pumping Engine; first to turn out a Self Contained Auxiliary Cooler for Pumping Engines; first in America with All Steel Aerial Ladder; first 100% Hydraulic Hoisting Mechanism for Aerial Ladders; first to design and produce the All Steel Canopy Cab.

SEAG

THE GREATEST NAM

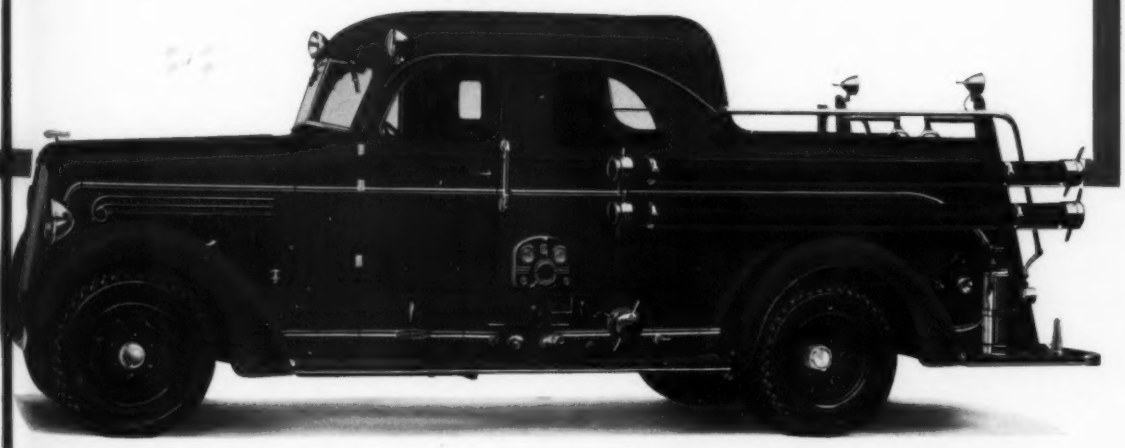
Seagrave

COMPLETELY MOBILIZED FOR DEFENSE

Yes, we are in defense work up to our ears, turning out Seagrave Apparatus for the use of Uncle Sam's fighting forces in army camps, navy yards and air stations, both at home and throughout the world. . . . This production, coupled with priority ratings, naturally restricts the amount of apparatus we are permitted to build for and delays delivery to municipalities. . . . It may be impossible to meet your immediate needs for fire apparatus at this time. . . . But there will come a day, and we hope that it will be soon, when war demands will relax . . . then, once again, dependable Seagrave Apparatus will be available to you.

The Seagrave Corporation, Columbus, Ohio

BICKLE-SEAGRAVE LTD., WOODSTOCK, ONT.



GRAVE

FIRE APPARATUS

FOR PROTECTION AND SAFETY

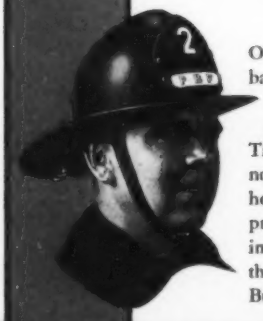
FIVE M·S·A ESSENTIALS

IN FIREFIGHTING AND FIRST AID!

Designed in every respect for *action,* these products are built to the highest standards of quality—meeting today's demands of the regular and auxiliary fire services for top safety performance on the job!

M·S·A ALL-SERVICE GAS MASK

Wherever smoke and gas endanger the firemen, this time-proved mask provides protection and easy working comfort. Safety against *all* industrial gases, fumes and smoke—singly or in combinations, *including carbon monoxide*—joins with wide-angled clear vision and unhampered freedom of action for greatest efficiency. Automatic timer measures service life of canister—Bulletin No. EA-6.



M·S·A FIREMAN'S HELMET

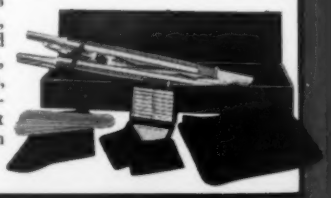
One-piece molded of laminated bakelite in modern streamlined design, ready at all times to meet the head-hazards of active duty! Tremendously resistant to impact—non-softening from exposure to heat, water, oils or perspiration—proof against electric shock—trim in appearance and well-balanced on the head. Full details in descriptive Bulletin No. DX-5.

M·S·A ONE-HOUR BREATHING APPARATUS

Equipped with the M.S.A. All-Vision Facepiece, for complete coverage of face, this time-proved apparatus provides a full hour's respiratory protection in unbreathable air, even under extreme exertion; permits the unobstructed vision so desirable in smoky locations; is self-contained, compact, well-balanced and light in weight; offers no interference to freedom of movement. Bulletin No. BM-6.

M·S·A FOLDING STRETCHER OUTFIT

New, compact, easy to handle and transport—ideal for vehicles, first aid posts and dressing stations. Strong steel case contains sturdy folding stretcher (opens quickly to full Army size), splints, a wool and a rubber blanket, chemical hot pads, and an M.S.A. All-Weather 16-unit First Aid Kit. Bulletin No. FA-77.



M·S·A FOILLE BURN SPRAY KIT

Always ready for instant use—nothing to mix or prepare—just connect jar of Foille for Burns to spray gun and quickly apply over burn. Pain is relieved, healing hastened. Unit-packaged first aid dressings and a sterile sheet are included, with an ample supply of Foille. Bulletin No. FA-73.

MINE SAFETY APPLIANCES CO.

Braddock, Thomas & Meade Sts., Pittsburgh, Pa.

District Representatives in Principal Cities

Heroes who never fire a shot . . .

The man who wears this helmet has been a hero for so long that some folks now may be overlooking the vital war job he is doing.

Every fire he puts out means money saved to help win the war. Every life he saves means manpower conserved to help win the war. Every fire licked in a war plant means production saved to help win the war.

It seems to us that somebody ought to keep saying over and over again . . . "don't forget America's firemen when war heroes are being acclaimed!"

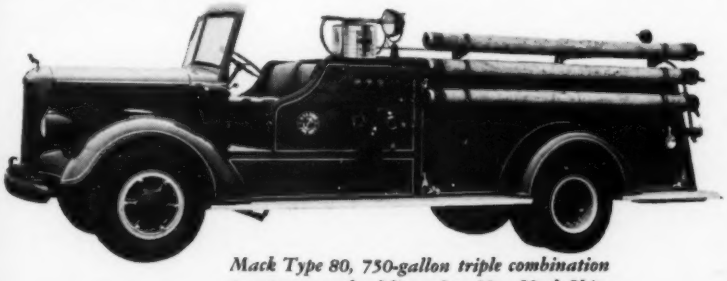
Better-than-ever Mack Fire Apparatus . . . at a time it's needed most!

To help you firemen handle the biggest and most important assignment you have ever had... Mack is building fire apparatus that in dependability and performance exceeds any we have ever made. In Army camps, vital war production centers and elsewhere today this new equipment is demonstrating advantages that can result only from the industry's greatest engineering and manufacturing resources. A Mack, today, in war paint and without chrome plate, is a good force to have on your side in fighting the fires that fight for Hitler. Write today for complete information on the Macks you need!

MACK MANUFACTURING CORP., Fire Engine Division, Long Island City, N. Y.

★

The Mack Fire Apparatus line includes triple and quadruple pumpers from 200 to 1500 gallon capacity, hose wagons, city service ladder trucks, squad cars — comprising 14 distinct and specialized models. 70 convenient direct factory branches offer a quick, low cost answer to any and all service problems.



Mack Type 80, 750-gallon triple combination pumper recently delivered to New York Shipbuilding Corp., Camden, N J.

BUY U. S. WAR BONDS

Mack

We shall appreciate your mentioning FIRE ENGINEERING *when writing advertisers*

New Models...New Features

ALL are being subordinated in our efforts to win a United Nation's Victory. Putting first things first—devotion to duty has been a tradition of the fire service—and we salute you fire chiefs for your determination to afford every protection to the homes and industries that alone must provide the weapons for ultimate victory. American-LaFrance*, too, is working with every facility available to manufacture the greatest volume of quality fire fighting equipment in our history that you and our fighting forces may have sufficient for any emergency.

Ultra-Modern Service Aerials

Streamlined Pumping Engines

AMERICAN-LAFRANCE-FOAMITE CORPORATION
ELMIRA, NEW YORK, U. S. A.
LAFRANCE FIRE ENGINE AND FOAMITE LIMITED
TORONTO, 9, ONTARIO, CANADA

THE 600 SERIES

American-LaFrance*—Revealing a Perfection in Utility, Safety, and Performance That Is Setting a New Standard in Fire Service

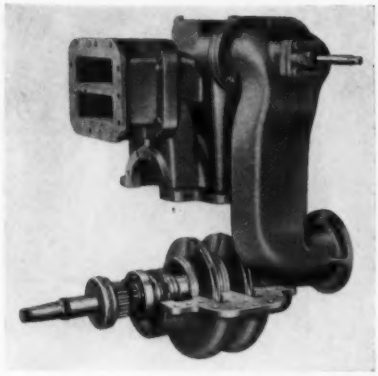
CONVENTION or not—you know that American-LaFrance leadership is being maintained in the fire service by the everlasting concentration of American-LaFrance on the problems (your problems) of the fire service—and doing something about it!

That's just one of the many reasons for fire department preference of American-LaFrance factory built fire apparatus. Improvements as they are proved!

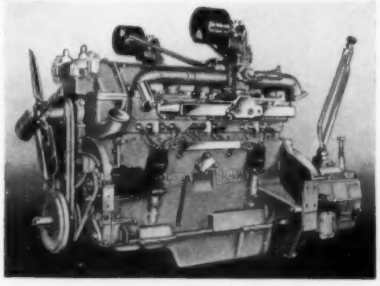
The 600 series is basically the 500 series, with improvements that add utility, safety, and performance to win your enthusiastic approval. Here are a few:

- Improved body arrangements for easier access to equipment.
- More locker space for carrying equipment giving protection against weather and loss.
- Greater visibility for the driver for safer operation in traffic and on the highway.
- Improved motor temperature control for quick warm up, yet adequate cooling for all pumping or road conditions.

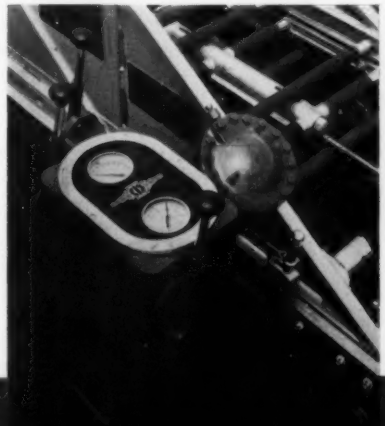
The American-LaFrance trade-mark is a symbol of dependable protection. The finest fire apparatus your city can buy carries this trade-mark—insist on it for your protection. Let us send you additional information.



The 600 series CENTRAFLOW pump is simpler yet more efficient and retains all the valuable, exclusive features of the 500 series



Smooth and powerful V-12 motors have many improvements for longer life with plenty of reserve power for emergencies



Added safety features for men and equipment on all-steel aerial ladders. Velvet-smooth controls for accurate operation

* LA FRANCE-FOAMITE in Canada

following comparative tests

WASHINGTON, D. C. *orders* 22 FOSTER SIRENS

Before placing an order for air raid sirens, the Commissioners of the District of Columbia had comparative tests conducted on the several types of horns and sirens offered for air-raid-warning service.

These tests conclusively proved that the Foster Siren has a higher average decibel rating — a wider range of audibility — than any of the other types tested. As a result of these tests, twenty-two Foster Sirens will be installed in Washington's permanent air-raid-warning system.

Before you purchase sirens, we suggest that you send for details of these tests and their results. A sixteen page booklet containing this information, as well as a descriptive folder on the Foster Siren will be sent without cost or obligation. Simply ask for Reprint MSE and Bulletin 41-S.

This siren not only can be heard for miles, but it needs no pampering. The simple design includes but few parts, and these are constructed to withstand "emergency service."

Furthermore, it works fast — its rising sound pitch or howl reaches its peak in from three to five seconds, depending on the maximum pitch for which this siren is set. And—it can be used for signaling because of its sharp sound cut-off.

If a constant pitch is desired, this siren can be so ordered or factory converted into a revolving cylinder-type of horn which produces practically a single pitch from starting to full speed, as contrasted with the conventional siren action with rising pitch or howl.

Type 30 Foster Siren
(Small Size)

Size of Valve:	1¼ inch (female thread)
Actuating Medium:	Steam or Air
Pressure:	50 lbs. minimum—200 lbs. maximum
Temperature:	450 degs. Fahr. (total)
Consumption:	Steam—approx. 1100 lbs. of steam per hour
	Air—approx. 500 cu. ft. of free air per minute
Diameter of Rotor:	3 inches
Diameter of Horn:	8½ inches
Net Weight:	60 lbs. (assembled)

Type 45 Foster Siren
(Large Size)

Size of Valve:	1½ inch (female thread)
Actuating Medium:	Steam
Pressure:	75 lbs. minimum—200 lbs. maximum
Temperature:	450 degs. Fahr. (total)
Consumption:	Approx. 3000 lbs. of steam per hour
Diameter of Rotor:	4½ inches
Diameter of Horn:	18 inches
Net Weight:	110 lbs. (assembled)

Both the Type 30 and the Type 45 Foster Siren can be furnished with a solenoid operated valve for electric remote control, either for separate "push button" operation, or tied in as an integral part of an air-raid-warning or fire-alarm system.

FOSTER ENGINEERING Company

PRESSURE REGULATORS . . . RELIEF AND BACK PRESSURE VALVES . . . AUTOMATIC STOP AND CHECK VALVES . . . ALTITUDE VALVES . . . DAMPER REGULATORS . . . FAN ENGINE REGULATORS . . . PUMP GOVERNORS . . . TEMPERATURE REGULATORS . . . LIQUID LEVEL CONTROLLERS . . . FLOAT AND LEVER BALANCED VALVES . . . NON-RETURN AND TRIPLE DUTY VALVES . . . VACUUM REGULATORS OR BREAKERS . . . SIGHT FLOW BOXES . . . STRAINERS . . . SAFETY VALVES . . . SIRENS

109 MONROE STREET . NEWARK, N. J.

FIRE PUMPS?

NEW YORK STATE COMMITTEE ON FIRE DEFENSE
First Trust Company Building
44 Broadway
Albany, New York

To Whom It May Concern:

For over ten years our fire department has been gradually replacing all of our soda and acid extinguishers with the **Smith Indian Fire Pump** until today we do not carry on any of our apparatus soda and acid extinguishers.

We have found the **Smith Indian Fire Pump** to be adaptable and doing the best job on all types of fires formerly controlled by the soda and acid extinguisher.

About 80% of our fires are extinguished by firemen equipped with the **Smith Indian Fire Pump.** We find that it is easier to refill. It extinguishes twice as much fire as any soda and acid extinguisner and the convenient back-pack gives faster service.

In climbing ladders, working on roofs and in many other difficult places, the **Smith Indian Fire Pump** does a job that cannot be performed by other extinguishing devices.

The latest problem that the fire department has is the extinguishing of magnesium bombs, and in actual tests we have found that these can best be done with the use of the **Indian Fire Pumps.**

As the Chief of the Fire Department of 35 years' experience I am glad to recommend the **Smith Fire Pump** for use in extinguishing all types of fires which, in the old days, were controlled by soda and acid extinguishers or pump tank extinguishers.

Very truly yours,

J. N. SULLIVAN,
Chairman,
N. Y. S. Fire Defense Committee

TODAY is a period of rapid changes. Not the least of these the wide preference shown by municipal and volunteer fire departments for INDIAN FIRE PUMPS in contrast with soda acid extinguishers. The fact that INDIANS require no scarce, expensive chemicals, that they may be refilled at any water supply, that they are the easiest, fastest way to handle grass, barn, roof and building fires—makes them number one choice of the men who KNOW. No hose to carry, water damage is minimized, near water costs nothing—all are highly important in selecting YOUR back pack fire fighters.

THESE excerpts from testimonial letters in our files are representative of the high opinion fire chiefs have of INDIAN FIRE PUMPS. We will be glad to send copies of these and other letters upon request.

"INDIANS certainly live up to everything you claim. We could not get along without them. It is a pleasure to recommend INDIANS to other fire departments."

"We wouldn't be without our INDIAN FIRE PUMPS. I find them indispensable and add more every year."

"INDIANS performed perfectly at the worst grass fire we ever had. They are the best fire tool I ever used."

MADE IN AMERICA

D. B. SMITH & CO.

406 MAIN ST. UTICA, N. Y.

Fire Equipment & Rubber Co. Carco-Conwhit Sales Co. The Conwhit Co. Mill and Mine Supply, Inc. Roy G. Davis Company

. . . and all is well

The illustration shows an A.D.T. supervised watchman transmitting a signal to an A.D.T. Central Station. At prescribed intervals during his tour of duty he sends these signals, and so long as they come in on schedule, the Central Station knows that "all is well."

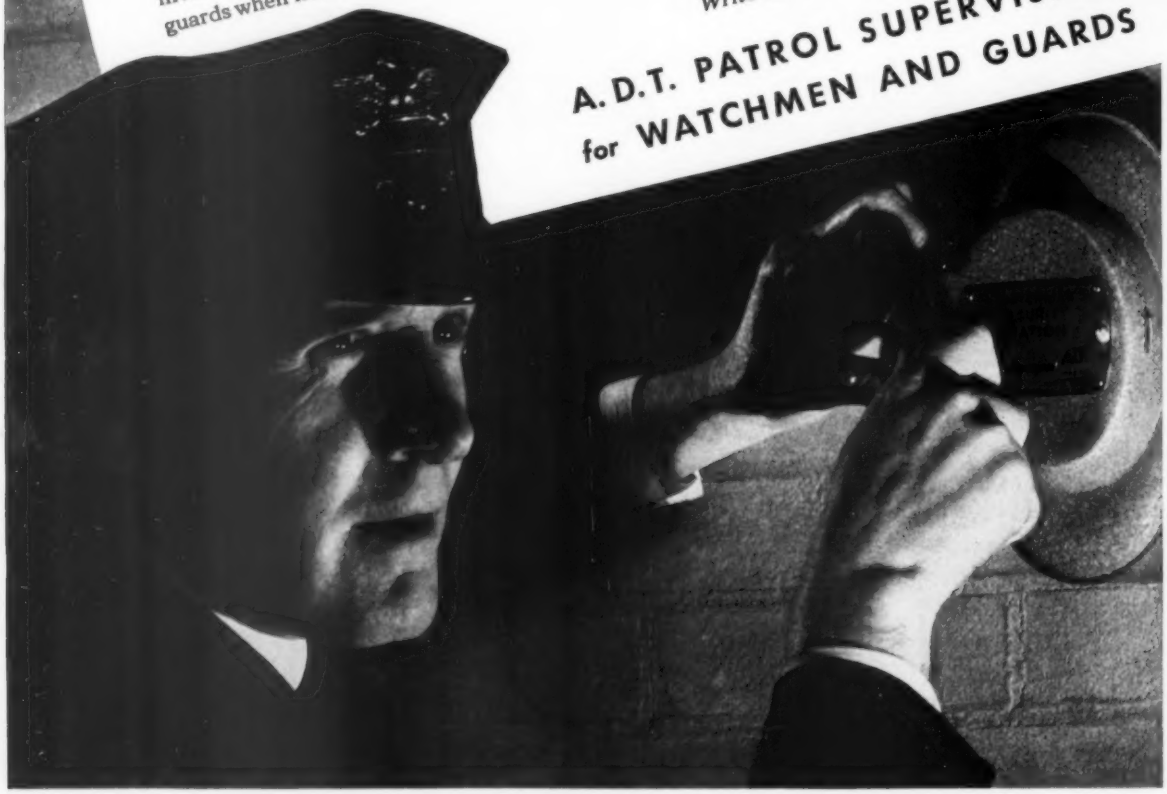
But suppose that all is *not* well. Suppose that for any reason—accident, illness, attack by intruders—the watchman fails to signal. *With A.D.T. Supervision, failure of the watchman to signal on time is an automatic call for help.* The Central Station promptly investigates, dispatching armed and bonded guards when necessary to render emergency assistance, notifies designated officials, and arranges for continuity of the watch patrols if the regular watchman is incapacitated.

In conjunction with Watchman Supervision A.D.T. also provides Manual Fire Alarm Boxes to summon the fire department directly to the scene of any fire outbreak and emergency signaling devices for secretly summoning police assistance.

This comprehensive supervision and backing up of the watchman by an independent, outside organization of trained experts assures maximum effectiveness of guard and watchman forces. It keeps constant watch over the watchman's performance—not the following morning—but from minute to minute while he is making his patrols.

Write for free descriptive booklets.

A.D.T. PATROL SUPERVISION for WATCHMEN AND GUARDS



A.D.T. ELECTRIC PROTECTION SERVICES

Controlled Companies of **AMERICAN DISTRICT TELEGRAPH CO.** *155 Sixth Avenue, New York, N. Y.*

CENTRAL STATION OFFICES IN ALL PRINCIPAL CITIES OF THE UNITED STATES

A·D·T

Electric Protection Services

AGAINST FIRE · BURGLARY · HOLDUP

A NATION-WIDE ORGANIZATION

GLENN L. MARTIN COMPANY
Leader in Aviation Progress

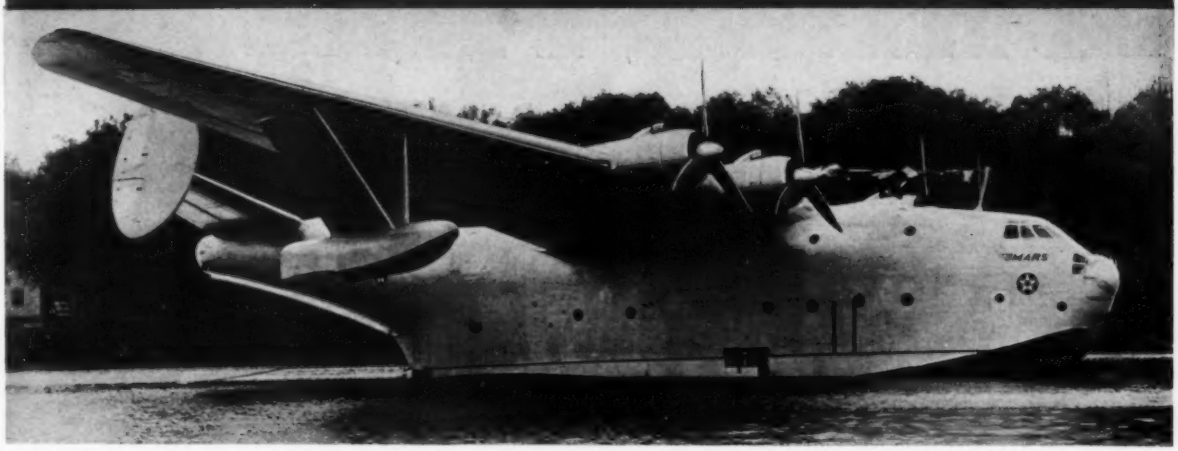


Photo shows the huge new Air freighter "Mars"—one of the many outstanding Glenn L. Martin achievements.

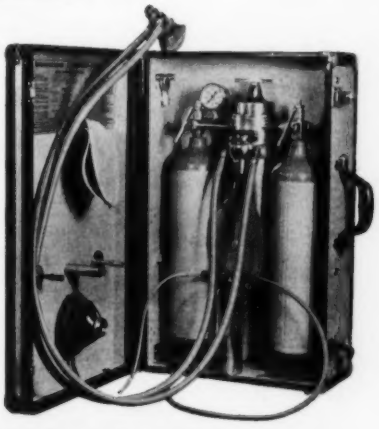
Safeguards the lives of its vast army of workers with the . . .

E & J RESUSCITATOR INHALATOR and ASPIRATOR

PROBABLY no aircraft builder has made a greater contribution to aviation advancement in general and the war effort in particular, than the Glenn L. Martin Company. And certainly no manufacturer has done more to bring about safer working conditions for its employees.

That the Martin plant, a model of modern industrial safety, is equipped with a large number of E & J Resuscitators is a distinction for which we feel justly proud. Many of the other outstanding industries which form the backbone of the war effort are E & J equipped, too, because they know from experience that it can be used with absolute safety and extreme effectiveness in the most desperate cases of asphyxia complicated by severe internal injuries, bad burns, fractured ribs, etc.

Your organization cannot properly and conscientiously serve your community if you are not prepared to administer artificial respiration both mechanically and manually. Both methods are absolute necessities in modern warfare and modern living.



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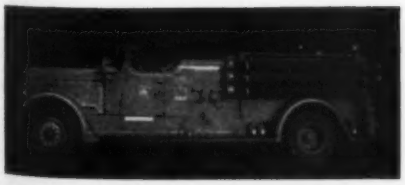
In Defense of the Home Front



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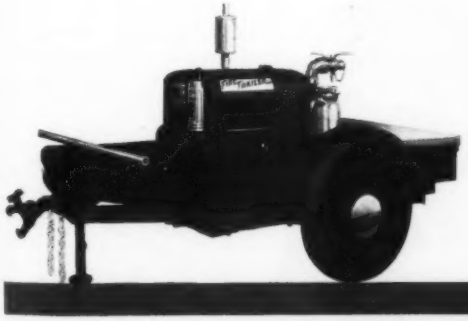
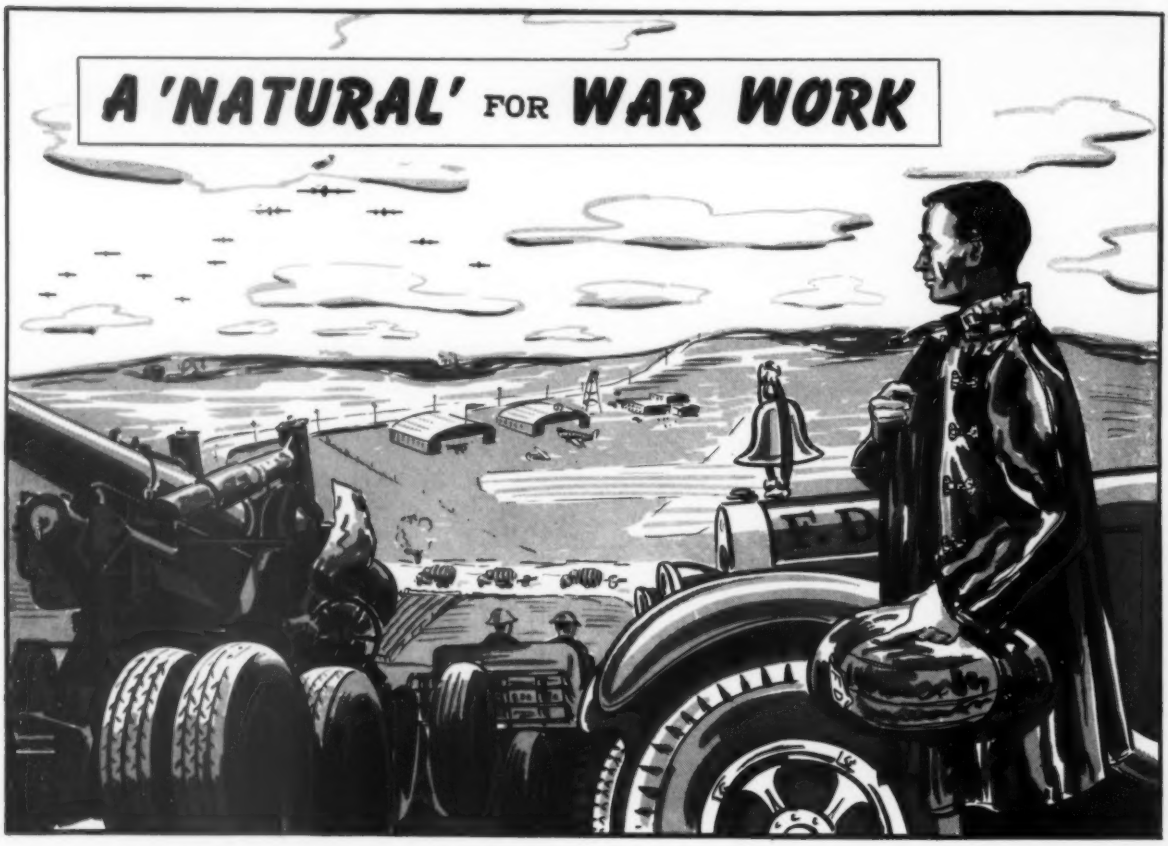
Get the facts about the LaBour Fire Trailer—see how admirably it fits into any rational fire-protection scheme. Ask for your copy of Bulletin 49, which will be sent free at your request.



THE LABOUR COMPANY, INC.
Elkhart, Indiana, U. S. A.

LABOUR FIRE TRAILER



Firemen Know War

War isn't new to firemen. Their entire lives are spent fighting man's endless battles against fire — now aided and made immeasurably worse by the bombs and shells of the enemy.

And war isn't new to us. Our business has always been that of making protective clothing for firemen, and about all we had to do to get in the *new* war was to start shipping to the government, in addition to the fire departments of the nation.

The government, viewing civilian defense needs, permits us to provide protective clothing for municipal fire departments, particularly in defense areas, but of course the armed forces protecting our vitals need protection the most, and they have first call on our production.

For this reason, unavoidable delays sometimes occur, but our production has been stepped up and you can look to MIDWESTERN in these times, as firemen have for many years, as the most reliable source of supply for firemen's (and policemen's) protective clothing.

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SAFETY COATS

Our famous striped coats with yellow stripes are still available. WPB orders temporarily prohibit white-striped coats and Chief's all-white rubber coats. However, Chief's all-white canvas type coats are still available. Write us for full descriptions, catalog, and samples of fabrics.

NOTE TO CHIEFS:

You can assist our war effort and make your deliveries more certain by placing your fall orders early.

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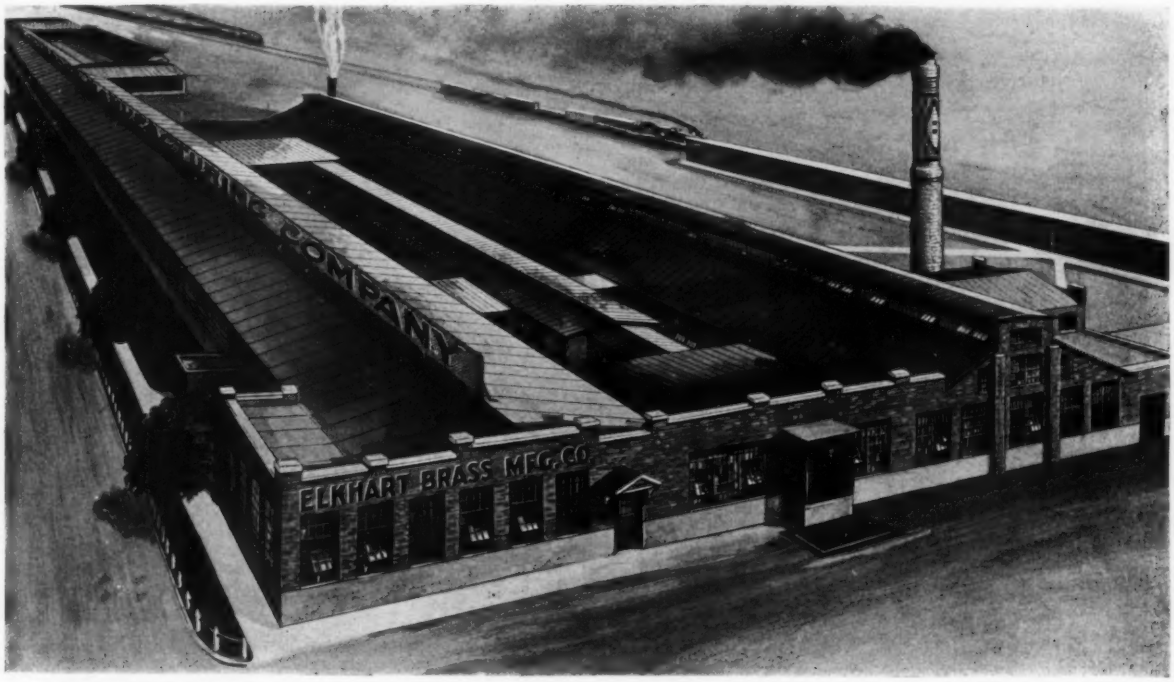

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AMERICA AGAINST FIRE

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While we are no longer able to manufacture our complete line of brass fire equipment because of government restrictions on the use of priority materials, we still can supply you with much of the equipment that is essential to your important work.

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Cotton rubber lined fire hose available in size 1½" and 2½" Single Jacket. Sizes 1½", 2½", 3" Double Jacket. Meets Emergency Federal Specifications. Goodall's "Duration" Brand is the best quality fire hose that can be manufactured under present government rubber restrictions order. Guaranteed to be free from defects in material and workmanship upon delivery.

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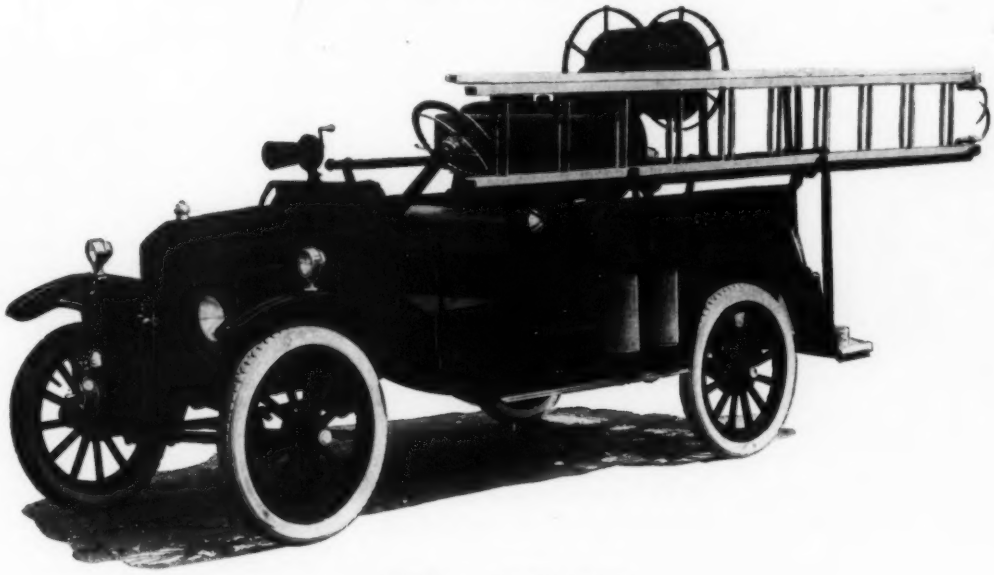

— To 1942 —

WE HAVE KEPT PACE WITH THE AUTOMOTIVE INDUSTRY

The well known Barton-American Front-Mounted Fire Pumps are adaptable to any commercial truck chassis.

Convert your present auxiliary truck into that much needed pumper.

AMERICAN-MARSH PUMPS, INC.

CENTRIFUGAL, TURBINE, STEAM, AND POWER PUMPS

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The blue covered catalog is the latest published but write for our new price list. Only prices in the catalog on 14 karat gold items are still in effect. All auto plates are discontinued for the duration.

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AKRON BRASS PRODUCTS SERVE

Around the world Akron Products are guarding the lives and equipment of our fighting forces.

Multiversal Deluge Nozzle

The quality and service inherent in Akron Products so necessary in peace times have become a MUST in war times.

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WOOSTER ★ FOR VICTORY BUY UNITED STATES WAR BONDS ★ OHIO

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AIR RAID SIRENS
TO WARN MILLIONS IN NEW YORK CITY

Stop playing with untried and unimproved gadgets, use reliable and approved warning signals. Insist on the type England uses—Demand H.O.R. Sirens.

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It is the duty of every Civilian Defense Co-ordinator to see that his city and manufacturing plants should install efficient air raid warning sirens at once.

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H.O.R. air raid sirens have been proven in their efficiency under all conditions and have been manufactured since 1934.

Do not delay, write immediately for full information and data on how to plan, install and operate air raid warning sirens.

Delay may prove costly—act now and we will do our best to cooperate with you in fast delivery.

CONSIDER THE FACTS

The mythical idea of having a sounding unit to give three to five miles coverage sounds good, but, it is unpractical. Remember, when a person can hear a sound unit at five miles distance, the one within several hundred feet from it would have his ear drums permanently injured. So do not be fooled with these ideas, but follow sensible methods with a sensible warning signal. We are prepared to give you substantial advice.

★ ***Write today for further details*** ★

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ACME *Full-Vision*

ALL-PURPOSE Gas Mask

Combines Protection for the Fireman Against CARBON MONOXIDE and All Other Gases, With Complete Protection Against Smoke

No. 4 Acme All Purpose Gas Mask with 10-inch Hose for wearing in front.

A fireman is required to meet all kinds of hazards while fighting fires. To perform his work with utmost speed and safety, he needs assured gas mask protection against Carbon Monoxide, and all other gases with which he may come in contact. In addition, the mask must provide adequate protection against SMOKE SUFFOCATION, and fume poisoning. The Acme FULL VISION All-Purpose Gas Mask meets ALL these requirements, while affording the wearer unequalled comfort and safety.

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Another important safety feature on Acme Masks is the Acme Timer, which has a half-white and red dial that automatically warns the wearer of the length of service life remaining in his canister.

Acme Gas Masks require only a light tension to fit them to the face, thereby eliminating headaches and other physical distress.

ACME DOUGHBOY TYPE ALLOY STEEL HELMET

During the present emergency, it becomes most necessary that firemen be equipped with dependable Helmets.

The Acme Doughboy type Helmet (pictured on right) is made of Manganese Alloy Steel (same as U. S. Army Steel), and weighs only 1¾ pounds complete. The crown of the Helmet is cushioned to relieve head shock, and provide protection against falling and flying objects. When necessary, the Helmet can be worn comfortably with Acme Gas Masks.

The cushioned lining within the Helmet, plus the Leather Chin Straps, can be adjusted to any head size. Firemen will find that Acme Helmets provide unequalled head protection.

Write TODAY for Prices and Descriptive Literature on Above

ACME PROTECTION EQUIPMENT COMPANY, INC.

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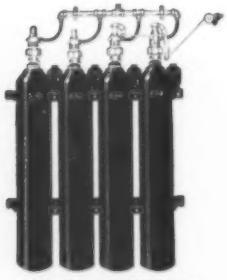
3616 LIBERTY AVENUE Cable Address: ACMEPROCO PITTSBURGH, PA., U.S.A.

Fire writes another tragic tale –

This picture won't mean a thing to you if every fire hazard in your plant is properly protected against fire. But if you have machinery, equipment, materials or special production methods, which might be damaged or ruined by fire extinguishing liquids or water, we urge you to consider C-O-TWO now. Fires in spray rooms, drying ovens, storage vaults and dip tanks can be extinguished in split seconds with C-O-TWO carbon dioxide gas, one of the fastest fire extinguishing agents. Flammable liquids and electrical fires are knocked cold in seconds with C-O-TWO—and without the slightest damage to machinery or materials. There are portables, hose reel and rack units, automatic and manual fire extinguishing systems with fixed piping, and smoke detecting systems to protect your plant and materials. Please write for further information.

IT'S SAFER *because* IT'S FASTER



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—lever release type—for protection of varied hazards in one or more areas. Operated by either rate of temperature rise or, fixed temperature.

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For quick knock-out of laboratory, bench fires, electrical equipment or sudden fire in flammable chemicals or liquids. Sizes:—2 to 20 lbs.

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For quick action on sudden fires throughout your plant. The hose and horn are easily handled and the equipment is instantly mobile.

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C-O-TWO FIRE EQUIPMENT COMPANY

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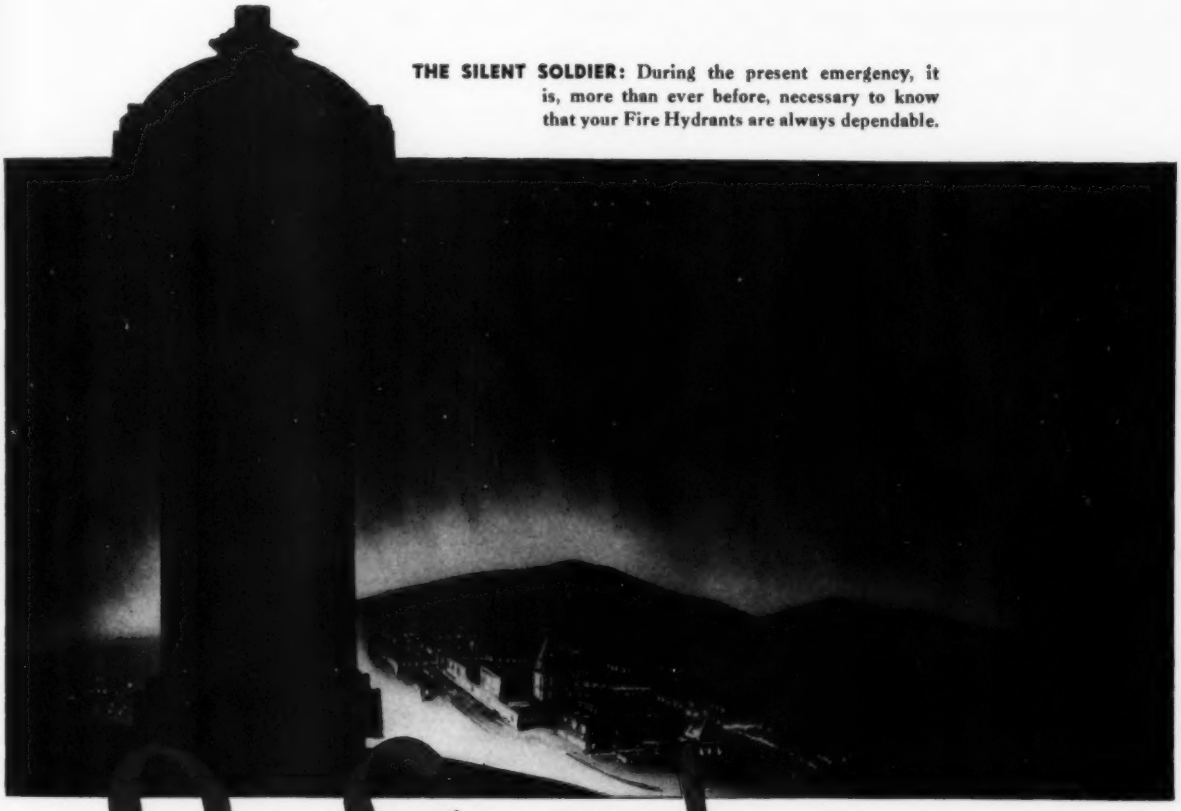
Sales and Service in the Principal Cities of United States and Canada



THE SILENT SOLDIER: During the present emergency, it is, more than ever before, necessary to know that your Fire Hydrants are always dependable.

On Guard...

An Army and a Fire Hydrant must have one thing in common: DEPENDABILITY in an EMERGENCY. With the New Rensselaer "DEFENDER" this quality is triply★ assured.

★1. Easy to operate—Utilizes famous "Knuckle-joint" principle. Opens with water pressure.

2. Easy to service—All parts readily removed by one man. No special tools required.

3. Safe against Bombs—Can't leak due to stand-pipe breakage.

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If your city were *bombed tonight*...

Would *all* your hydrants be ready for immediate service — prepared to deliver a quick, steady flow of water at many points? If they're Ludlow Hydrants, there can be only one answer — it's an emphatic YES!

Ludlow Hydrants afford the best protection against multiple flare-ups (such as caused by bombings) or routine fires. They respond instantly, yielding an abundant flow with minimum shock. Complete drainage at the lowest point prevents freezing. Wedge locking gate prevents flooding. Inspections may be made easily, without digging out parts beneath ground surface. Volunteer fire-fighters, with emergency training, find Ludlow Hydrants easy to operate. You'll find that they afford ideal protection for that new defense area in your community. Send for Catalog.

THE LUDLOW VALVE MFG. CO., INC.
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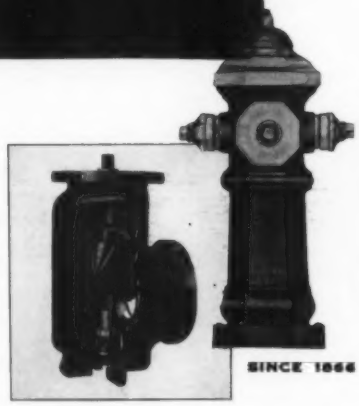
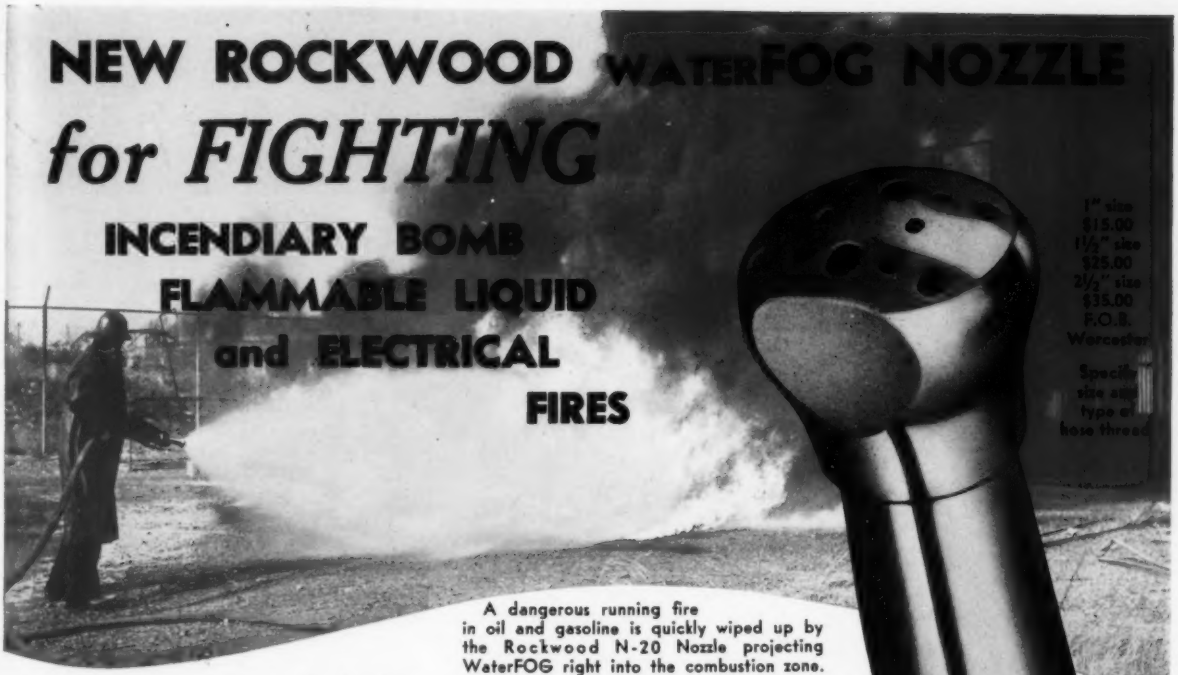
Ludlow Construction. Self-releasing 30° angle wedges and free-floating gates, self-adjusting to seats, afford smooth, trouble-free performance, long service. Opening and closing of hydrant automatically opens and closes drain, located at lowest point. Clogging is prevented. Gate is wedge-locked, when closed, to prevent flooding. All working parts may be lifted through top of hydrant for easy inspection. Top and bottom bodies bolted together at ground line.



LUDLOW HYDRANTS

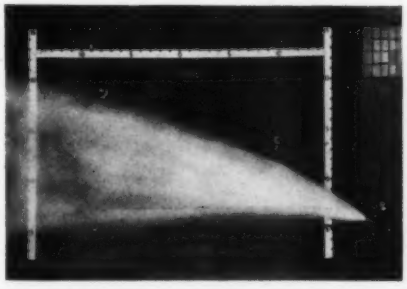
NEW ROCKWOOD WATERFOG NOZZLE *for FIGHTING*

INCENDIARY BOMB FLAMMABLE LIQUID and ELECTRICAL FIRES



A dangerous running fire in oil and gasoline is quickly wiped up by the Rockwood N-20 Nozzle projecting WaterFOG right into the combustion zone.

This practical new nozzle was developed so that firemen can *safely* combat three dangerous hazards which confront almost every fire department today—incendiary bombs, flammable liquid fire and fires in high voltage electrical equipment.



WaterFOG pattern discharged by the new N-20 WaterFOG Nozzle is measured on this huge scale at the Rockwood testing grounds.

First, the new Type N-20 Rockwood WaterFOG Nozzle gives ordinary water remarkable new power to extinguish fires by generating it into WaterFOG. Second, by means of a new method known as *internal* impingement, developed by Rockwood engineers, it is possible to project a larger, dense pattern of *low velocity* WaterFOG far greater distances than heretofore has been possible.

Thus, the Type N-20 Rockwood WaterFOG Nozzle gives you more powerful and faster action in extinguishing fires in flammable liquids and materials as well as in ordinary combustibles. It will put out in a few seconds burning oil and phosphorous types of incendiary bombs. Using the N-20 Nozzle from a safe distance, firemen can render harmless the dangerous thermit-magnesium bombs—by accelerating their consumption and thoroughly cooling and wetting down the surroundings. The long range and extremely low conductivity of the WaterFOG it discharges, makes the Rockwood Type N-20 a nozzle which firemen can use safely in fighting fires in oil filled transformers and other electrical equipment carrying high voltages.

Rockwood N-20 WaterFOG Nozzle converts plain water into WaterFOG—the remarkable new extinguishing agent. Projects a larger WaterFOG pattern greater distance by Rockwood's New method — *internal impingement!*

ROCKWOOD WATERFOG APPLICATORS

Another new fire fighting weapon already in wide use by municipal fire departments, industrial plants, institutions, ships, etc. These applicators guard against hazardous fires so difficult to extinguish by ordinary methods. All types of oils, kerosene, mineral spirits and even gasoline in small containers — are *safely* extinguished by WaterFOG Applicators. Economical operation. Construction is simple, sturdy. There are two standard sizes — 6 ft. lengths and 10 ft. lengths, equipped with ball-type shut-offs.

Order Rockwood WaterFOG Applicators and Hose Nozzles from your regular Fire Equipment Distributor.

10 ft. size $62.00 F.O.B. Worcester

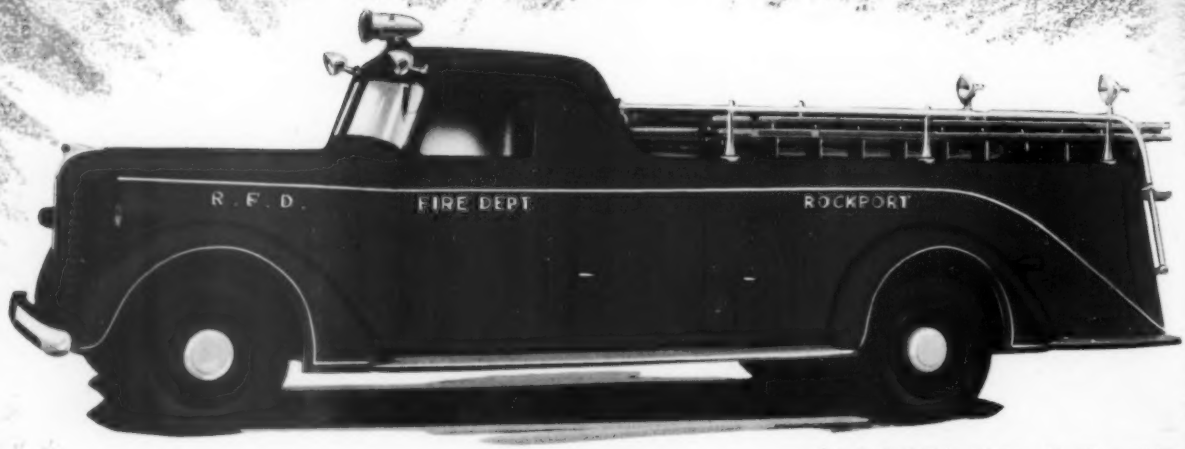
6 ft. size $40.00 F.O.B. Worcester

ROCKWOOD SPRINKLER COMPANY

Specialists in the Engineering, Manufacture and Installation of Fire Protection Equipment for 36 Years

54 HARLOW STREET **WORCESTER, MASSACHUSETTS**

FIRE KNOWS NO PRIORITIES



Standard Buffalo Triple with Clear Vision Cab recently delivered to Rockport, Maine.

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FIRE ENGINEERING

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With the Editor

Is the Fire Service Delinquent?

Dean James M. Landis, director of the Office of Civilian Defense, stated at the N. F. P. A. convention at Atlantic City, N. J., on May 11, that "in community after community in the East, little has been done beyond the stage of recruiting because of the hesitancy on the part of the professional (fireman) to lend his aid and equipment to the training and equipment of the amateur."

The picture is nowhere as dark as Dean Landis paints it, as fire chiefs throughout the eastern part of the country, who have toiled to perfect and apply their auxiliary training programs, can testify. To attempt to place blame on the professional fireman for the lag in civilian protection, it seems to us, is simply an example of buck passing. The record of the O. C. D. in providing fire protection to the public might not bear inspection.

As yet, after seven months of war, the most elementary step in civilian protection has not yet been accomplished—the provision to the public of first aid extinguishers for incendiary bombs. No fire department can alone cope with an aerial incendiary attack, as Great Britain well learned. The public, air wardens, auxiliaries and others must cooperate in controlling the majority of incipient fires from incendiary bombs; but they need the equipment, which has not yet been forthcoming.

If the imminence of enemy air attack is as great as officials of the O. C. D. have frequently asserted, it seems to us there would have been no place in their program for the dilatory policy which has been displayed.

To blame the professional fire service for lack of cooperation in training auxiliary firemen while the O. C. D. itself has been so tardy in providing them with the equipment needed in their work is most unfair. Of course, arm bands and helmets have already been furnished, but these do not constitute very effective fire fighting implements. Maybe they're expected to scare away the enemy bombers.

If there are some isolated cases where professional fire departments have failed to cooperate in training auxiliaries, we believe the cause can be traced right back to the O. C. D. For many capable fire fighters have less faith in that organization than an efficient and unified civil defense program demands.

When the directors of the International Association of Fire Chiefs

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in annual meeting at Grand Rapids, Mich., last January unanimously recommended one of its own officials as a member of the Fire Advisory Committee of the O. C. D., his appointment was refused. Apparently the O. C. D. felt itself better qualified to judge the ability of those in the fire service than the International Association of Fire Chiefs itself.

If the fire service conducted its affairs in the same vacillating manner as has the O. C. D. in providing auxiliary fire apparatus, our national fire losses would be staggering in size.

The fire service is accustomed to getting things done quickly, and it expects other organizations providing fire protection to do likewise. Thus it can easily be understood why its faith in the O. C. D. has been shaken.

Finally, before an organization criticizes the professional fire service because of supposed delinquencies, it might be well to resort to a little self-appraisal.

Why a Convention Number?

At first glance it may seem odd that a Convention issue of FIRE ENGINEERING is being published although the annual conference of the International Association of Fire Chiefs has been cancelled.

But a twofold purpose is accomplished by this Convention issue: keeping the interest of the fire service in the Association at its present high pitch, and providing fire apparatus and equipment manufacturers an opportunity to place their products prominently before the field.

The annual conference of the Association is the most effective means it employs for maintaining membership and enlisting the interest of new members; and this annual function represents the only opportunity for all members to come together to discuss their common problems.

Yet the officers and members were willing to call off this year's meeting, and sacrifice the benefits to the organization, solely in the interests of patriotism.

It was here that FIRE ENGINEERING stepped in to carry the banner for the year.

It is hoped that this Convention Number may serve, even to a modest degree, in keeping the Association at its present high level of interest, effectiveness and influence.

Defense Plants Can Get Protection

Plants doing war work should experience no trouble in getting such fire protection equipment as they may need, even though municipal fire departments protecting such establishments are finding the problem of apparatus purchase growing more difficult day by day.

For if a defense plant has a low priority number, it can use this same number on fire equipment orders. Thus it has the inside track to efficient fire protection, and should make the most of this advantage.

Fred Sheppard

Is the Fire Service Being Sabotaged by Federal Bureaus?

THE Director of the Office of Civilian Defense, James M. Landis, recently stated: "The American Fire Service has undertaken the task of preparing for the hazards of airborne incendiary attacks with a spirit and willingness which are an inspiration to the other civilian protection services. Confronted with the herculean task of gearing departmental operations to wartime tempo and of enrolling and training a large number of auxiliary firemen, most fire departments, from the small volunteer company in the rural areas to the full-time departments in large cities, have met this new challenge by calling on a reservoir of resourcefulness built up through years of peacetime fire fighting operations."

And, it may be added, the fire service can be counted upon to be prepared, within the limits of their facilities, to handle any situation which may arise.

No Apparatus Restrictions in Great Britain

British cities early learned the value of the fire service as a branch of national defense, when it fell the duty of the fire fighter to prevent complete destruction of British cities during the blitzkreig of December, 1940.

The weakness of the British fire forces in coping with wartime conditions was clearly demonstrated by this first great blitzkrieg. And it stands to the credit of the British officials that no time was lost in strengthening the service mechanically and otherwise in preparation for future attacks.

Today, the fire service in Great Britain stands on a par with the military as the first line of defense.

The lessons the British learned are being forgotten on this side of the water, if recent actions by Federal bureaus may be taken as any criterion. In an endeavor to increase munitions output to the maximum, restrictions are being placed on the manufacture of fire apparatus. So severe are these restrictions becoming that they now threaten to seriously impair the efficiency of American fire departments. This dangerous development is probably due to the placing of the power of decision as to which cities need fire apparatus and equipment in the hands of political appointees who know little of fire protection requirements; who know even less about the tools of the profession.

The Apparatus Bottleneck

Today the bottleneck of fire apparatus rests in the Bureau of Governmental Requirements, a comparatively new bureau within the War Production Board.

In its over-zealousness to curb non-military demands for critical materials this bureau is making it impossible for fire departments, sorely in need of apparatus, to protect war and other industries, to secure replacements of apparatus and equipment.

Fire departments already weakened mechanically are faced with a tremendous increase in fire hazards due to stepped up production of war munitions.

Despite the fact that national fire losses are mounting, the manufacture of fire apparatus is being further curtailed.

The situation today is extremely serious. That there have not been even a greater number of defense industries fires (and there have been plenty during the past six months) can be charged to good luck.

In refusing priority numbers for fire apparatus to many fire departments, it has been pointed out that these departments are scheduled to receive some of the emergency apparatus and equipment to be issued by the Office of Civilian Defense. But, apparently, the purpose of this O.C.D. apparatus has been forgotten, or is not known by the individuals passing on priorities. For on March 6, 1942, the President issued an executive order covering regulations concerning civilian defense, wherein it is stated "It shall be a condition of all such loans (of O. C. D. apparatus) that the civil authority to which each loan is made shall give assurance to the Director that the property loaned shall be adequately protected and maintained, that it shall not be used otherwise than for protection of persons and property from bombing attacks, sabotage or other war hazards." Thus the O. C. D. apparatus is not for use in everyday fire fighting.

In the paragraphs below a number of typical cases are cited wherein fire departments have been denied the right to purchase apparatus. The cities listed are but a small percentage of the hundreds which have reported their inability to secure sorely needed apparatus. Many of the cities listed are not scheduled to receive

Aged Fire Engines, Which May Stall at the Most Inopportune Time, Cannot Protect Defense Industries. A Large Part of the Fire Apparatus Now in Service in This Country Falls in This Class.

any O. C. D. apparatus due to the fact that they are not within the so-called attack zone or because they are not sufficiently large. It should further be pointed out that the O. C. D. has made no provision for furnishing fire alarm apparatus, hydrants, and other vital tools for fire fighting operations. Thus when a department is denied this special equipment, there is no alternative course which it may follow.

A review of the following cases, we feel sure, will convince the reader that, though not intentional, the fire service of the nation is being sabotaged by the action of Federal agencies in making it impossible to secure replacement apparatus, or additional apparatus, needed to bring the fire fighting forces up to even a moderate state of efficiency.

The information in the summary has been secured through courtesy of the International Association of Fire Chiefs, who recently made a nation-wide survey of the fire service to determine the situation insofar as securing new fire apparatus and equipment are concerned.

Requests for Fire Apparatus Turned Down

In the following cases, the status indicated is as of June 15. Any changes since that date have not been included.

Case 1. A New England town applied April 14 for priority for two combination pumping engines. This application was denied, despite the fact that this town had a fire a year ago in one of its largest industries, a rubber works, and 1,000 tons of crude rubbber was destroyed. The department had not been increased in strength since that time. In this town today there are eight factories each doing 100 per cent work for the government, such as equipment for bombers, insulation material for Signal Corps, parachute cords, woolen materials for War Department, etc.

Case 2. A large midwestern city, in which are located manufacturing plants supplying arms, equipment, machinery and tools for use by the Government in the war effort, applied on February 17, 1942, for priority for four pumpers, and on March 9 for two aerial trucks. The department is badly in need of this apparatus to replace machines which have been forced out of the service by age. Priority was granted on March 9 for two aerials, and for two pumpers on May 30. The priority for two pumpers still remains to be granted. In other words, the bureaus at Washington arbitrarily decide how many pieces of apparatus a city shall have no matter what its needs may be.

Case 3. A Pacific Coast city applied for priority on January 7, 1942, for two 750-gallon pumping engines. This request was denied on May 28, 1942. These engines are badly needed to bring the department up to strength, and to replace obsolete machines. The denial was made despite the fact that within this city are located factories manufacturing gun carriages and special high pressure fire equipment for the Army and Navy, and the fire department of this city must also stand by to aid three military establishments in the event of a fire.

When a Fire Engine Passes Its Twentieth Birthday, It Is No Longer Dependable. Stops on the Road for Repairs Do Not Help in Preventing Little Fires from Becoming Big Ones. Today Possibly Twenty Per Cent of All Fire Engines in Service Have Reached That Age.

Case 4. A city in the southwestern part of the country applied on May 10, 1942, for priorities for four triple combination pumping units. They received an A-10 priority rating for one unit only, although the city has about 260 firms of various sizes manufacturing such needed war products as four-motored heavy bombers, and uniforms for the Army. In addition, there are located within its borders large packing houses, a steel mill and foundry and the U. S. Army Quartermaster Depot.

Case 5. A town in the Middle Atlantic section, having eighteen large industrial plants making guns and shells, pump condensers and machine tools, crankcases for planes, radio tubes, cranes and chains for the Navy, and searchlight bulbs, applied on May 22 for priority for a 1,000-gallon triple combination pumper and an aerial truck, only to be turned down. They have received no word as to whether they are to receive any of the O. C. D. apparatus.

Protection Denied for Munitions

Case 6. A city in the northern midwest section applied on February 19, 1942, for a priority for a 1,250 gallon pumping engine and a 100-foot aerial ladder truck, only to have the request denied. This city has a number of plants manufacturing such products as airplane units, armor plate, industrial tractors and gun carriages. In addition it must render aid, should a fire occur, to an army camp five miles from the city and a non-commissioned officer housing project just outside the city limits.

Case 7. Another city in the midwest applied on March 18, 1942, for priority for a triple combination pumping engine. Their request was rejected on March 23, even though their industries include a number manufacturing bomb assemblies, turret transmissions, mess kits and shells.

Case 8. On April 15, 1942, a southwestern city applied for priority ratings for three ladder trucks and three pumpers. Their request for the three ladder trucks was denied. War plants within the boundaries of the city manufacture such things as parts for bombers, shells, sectional houses, etc. They are not on the list to receive apparatus from the O. C. D.

Case 9. A midwestern city applied on April 22, 1942, for priority for two booster tank trucks fully equipped. Its request was denied despite the fact that within its borders numerous plants were manufacturing vital war materials such as airplane parts, tires, etc.

Case 10. A Great Lakes city applied on April 25, 1942, for a priority for a 750 gallon pumper, only to be turned down. Within its limits are a number of plants doing defense work entirely.

Case 11. A western city applied on April 14, 1942, for priority for a 750-gallon pumping engine necessary to augment three pumpers which are not dependable, because of their age. Its request was rejected, although gauges, gun parts, furnaces, gaskets and other war products are being manufactured by factories within the boundaries of the city.

Case 12. A southern city applied on March 25, 1942, for priority for a 1,000 gallon pumper but was turned down in spite of the fact that within it are located assembly plants for different war equipment, a U. S. arsenal, an army camp and air base, a railroad freight depot and railroad shops.

Case 13. A city located in the midwest applied on April 25, 1942, for priority for a quadruple combination pumper. Its request was rejected. In the city there are about ninety plants engaged in the manufacture of war products such as parts for bombers, trucks, marine pumps, tools, chemicals, parachutes, thermometers for ships, boxes for bomber engines, etc.

Case 14. A New England city submitted three requests for priority for a 500-gallon pump. Its request was turned down twice and the case is now pending. Located in the city are numerous plants manufacturing grinding wheels, tools, heavy machines, leather, fabrics, cutting wheels, wood for Navy use, etc. This city is not on the list to receive any apparatus from the Office of Civilian Defense.

Case 15. Another New England city applied in January for priority for a 500-gallon pumping engine, but was turned down despite the fact that there are a number of companies manufacturing portable generators, internal combustion engines, iron and aluminum castings, generator armatures, bomb casing, felt, etc., for war use.

Case 16. A southern city manufacturing various kinds of war materials, including shells, applied for a priority rating for a 750-gallon pumper on May 1, 1942, but was refused the rating. It has been promised delivery of O. C. D. apparatus only after the east and west coastal cities have been supplied.

Case 17. A New England city having a large shipyard with contracts amounting to millions of dollars and employing more than 27,000 men was refused priority for two 1,000-gallon pumping engines and a sixty-five foot aerial ladder. In addition there are in the city two other smaller shipyards, a naval air base and about fifty other factories of all sizes engaged directly or indirectly in defense industries.

When Is a Fire Engine Not a Fire Engine? When It Has Reached the End of Its Useful Life. Too Many Engines Are Still Kept When They Are No Longer Dependable, Due to Inability to Secure Replacements.

Navy Supplies Need Protection

Case 18. An eastern city with defense factories manufacturing wire and cable for the Navy, chemicals, airplane radio parts and pavement blocks for use at military camps applied on April 7, 1942, for priority rating on a 750-gallon pumper. This was denied.

Case 19. Another eastern city applied on April 15, 1942, for priority for a 500-gallon pump. It was denied despite the fact that within the city are a number of defense industries manufacturing aviation gas, material for shells, etc. The city is scheduled to receive two front-mounted pumps, but has nothing to install them on.

Case 20. A New England town applied on April 23 for priority for an 85-foot aerial ladder truck. Its request was turned down despite the fact that there are a number of plants manufacturing wool, leather, tent cloth, machinery, railroad supplies, motors for the Navy, etc.

Case 21. A city in the South applied on April 22, 1942, for priority rating on a ladder truck and a triple combination pumper. It was given an A-10 rating on the pumper and was denied one on the ladder truck. In this city are a shell loading plant, an army depot and various manufacturing plants making articles for the War Department.

Case 22. A New England city applied on March 11, 1942 for priority for a junior aerial ladder truck and three 750-gallon pumping engines. This request was denied on March 21, 1942, even though the city has a number of defense industries manufacturing such war materials as parachutes, explosives, army fabrics, navy cloth, leather goods, etc. One of the munitions plants has recently secured two local plants for a factory. They are to build additional buildings of wooden construction without sprinkler protection and some of the buildings will be two miles from the nearest fire station.

War Industries Unimportant?

Case 23. An eastern city applied on April 13, 1942, for priority for a 750-gallon pumping engine and for a quadruple combination truck. The request was denied although plants manufacturing vital war materials such as pumps, boilers, condensers, incendiary bombs, chemicals, etc., are located within the borders of the city.

Case 24. A midwest city made an application for a priority rating for an aerial truck on April 30, 1942, and was denied it, even in view of the fact that the city is located in the center of a vast industrial area of about fifteen square miles where practically every shop is engaged in war production of some sort. The city

is located but four minutes from one of the government's largest arsenals and about five minutes from a tank arsenal.

Case 24. A southwestern city applied on May 10, 1942, for three pumpers and an aerial ladder truck. This request was denied despite the fact that there is a powder plant, an air school, an army camp and a government airport located within the city.

Case 25. An eastern city in which are located a Navy supply base, a shipyard manufacturing P. T. boats for the Navy, an Army supply base, a number of oil companies and two electrical companies, made an application for priorities for two 1,000-gallon pumpers and a 100-foot aerial ladder truck. This request was denied.

Shells and Planes

Case 26. A city located in the southwestern section of the country applied on May 15, 1942, for priority for a 750-gallon pumper. This request was denied in spite of the fact that a number of plants manufacturing war planes, shells, shell cases, uniforms, tents, plane props, etc., are located in the city.

Case 27. A New England city applied on March 14, 1942 for priority for a 500 gallon triple combination pumper to replace an obsolete machine. In this city are a number of plants manufacturing such vital materials as mine sweepers and PT boats, assault wire, boots and shoes, cloth, etc. The request was denied.

Case 28. A southwestern city applied on April 5, 1942, for priority for five 750-gallon pumping engines, two sixty-five foot city service aerial trucks and two 100-foot aerial trucks. This request was denied. Plants in this city manufacture many defense materials. There are also a number of large oil refineries within the city limits.

Case 29. A city in the South having defense plants manufacturing medical supplies, uniform material and tent cloth, applied in February, 1942, for priority for a 750-gallon pumping engine equipped with hose, nozzles and fire department tools. This request was denied.

Case 30. An eastern city applied on April 9, 1942, for priority number for a 750-gallon quadruple pumping unit. This request was denied despite the fact that in the city are plants making diesel engines for the Navy, and airplane parts.

Case 31. A New England city applied on January 24, 1942, for a rating on a 750-gallon triple combination pumper. This request was rejected in spite of the fact that there are a number of defense industries manufacturing vital war products.

War Chemicals and Gasoline

Case 32. A city in the South applied on April 18, 1942, for priority number for a 100-foot aerial ladder truck, a 1,250-gallon pumping engine, two 1,000-gallon engines and two 750-gallon engines. This was denied although the city has numerous plants manufacturing such hazardous war supplies as aviation gas, chlorine and caustic soda, sulphuric acid and synthetic rubber. Also in this city is located a plant manufacturing aluminum.

Case 33. A midwestern city applied for a priority number for three portable pumps on April 10, 1942, and for a 200-gallon steel tank on April 30. They asked for an A-1-J rating on the portable pumpers and received an A-10, with which they were unable to purchase the pumpers. They were refused any rating on the steel tank. In this city are two ordnance plants engaged in the manufacture of acids, TNT and other high explosives.

Case 34. A northern New England city engaged in the manufacture of bedding, blankets, uniform cloth, overcoating for the Army and Navy and plastics for Governmental use tried to get a rating on June 10, 1942, for a 750-gallon triple combination pumper. The request was turned down.

Case 35. A southwestern city applied on April 10 for priority rating for a truck and some hose. This request has been turned down, although the city has defense plants manufacturing tank engines and bomber parts.

Submarine Detectors

Case 36. A southern city applied on May 2, 1942, for priorities on two 750-gallon pumpers and two 65-foot service aerials. This request has been turned down although plants of the city manufacture such vital products as shells, anti-submarine detecting devices, clothing for the armed forces, cloth for the government and equipment for airplanes.

Case 37. An eastern city in which are located industries making chemicals, steel, electrical switches, cups and plates for the armed forces, etc., applied in May for either a 500-gallon or a 750-gallon combination pumping unit. This request was denied.

Case 38. An eastern city applied in April, 1942, for a rating for a triple combination pumper needed to replace a seventeen-year-old pumper. There is a defense plant within the city limits making parts for airplanes, and in addition, it is part of a mutual aid system and must respond to fires in a nearby community in which are a number of huge gas and oil storage tanks which supply a nearby air base. The request was denied.

Case 39. On April 2, 1942, another eastern city applied for priority for a chassis for an emergency truck. The application was turned down in spite of local defense industries manufacturing marine engines, gun barrels for anti-aircraft guns and tank parts.

Case 40. A New England city applied on April 22, 1942, for a priority rating for a 1,000-gallon pumper. This was refused by the War Production Board on May 2, 1942. In this city are industries making machine tools and dies, oil products, etc., for war use.

Woolen Mills and Storage

Case 41. Another New England city manufacturing woolen goods for the Army and Navy applied on April 15, 1942, for priority on a 750-gallon pumper and an aerial ladder truck. This request was denied. In addition to the woolen mills, there is also a number of woolen storehouses in the city.

Case 42. A Midwestern city applied on May 1, 1942, for two 1,000-gallon pumpers and received a priority number for one. In this city are plants manufacturing guns, ammunition and other essential war equipment. The city's airport is being used as a testing field for large bombers.

Case 43. An eastern city applied on April 23, 1942, for a priority rating for two 750-gallon pumpers. Priority for only one was received, yet this city has numerous factories making such products as bombs, shells, tool steel, steel for temporary landing fields, etc.

Case 44. Another eastern city applied on May 20, 1942, for an A-2 rating to purchase a trailer pump. An A-10 rating was received, but it is impossible to purchase any apparatus with such a rating. In this city are plants manufacturing shells and their contents.

Case 45. A Western city applied on January 10, 1942, for priority on a pumping engine. This was refused, although a gun relining plant and a U. S. Army air base are located within the city limits.

Case 46. A midwestern city applied on March 10, 1942, for priority on a quadruple combination pumper. An A-10 rating has been granted, but it is too low to secure the needed apparatus. In this city are factories manufacturing diesel engines, food products and numerous other articles needed for the war.

Case 47. A New England city applied on April 25, 1942, for two 750-gallon pumpers, one 1,250 gallon pumper, and one 100-foot aerial ladder. They were only able to secure priority for one 750-gallon pumper. In this city are plants making woolen goods, machine parts, shell containers, etc.

Other Equipment Refused

The preceding represent but a small part of the reports which have been made to the International Association of Fire Chiefs upon failure to get needed fire apparatus.

It should be pointed out that no city ever appropriates money for fire apparatus unless it is badly needed. And yet federal bureaus deny fire departments needed equipment, despite the fact that fire hazards today are far more serious to the welfare of the Nation than in normal times. No consideration is being given to the possibility of production interruption by fire, which is a major factor today in the war efforts.

Not only are fire departments denied needed motor apparatus, but they are also denied other equipment for which no substitute is being offered by the Office of Civilian Defense. Specifically, many cities have been unable to secure fire hydrants, badly needed to protect new or growing industries. Others are unable to secure sorely needed fire alarm equipment.

Here again the bureaus at Washington do not realize that no fire-department is efficient unless it can promptly call fire apparatus to fires. The first few minutes after a fire is discovered are the most vital. Unless the department is promptly called, a small fire may develop into a conflagration.

Alarm Systems Unessential?

A few specific cases of cities having defense industries which have been refused vital equipment, in addition to the motor apparatus, are given below:

Case 1. A southern city in which is located a bomber plant, a depot, a fort and numerous manufacturing plants making steel, cotton and other war products, ordered cable and other supplies for the fire alarm system. The War Production Board refused priority on these supplies and the orders had to be cancelled.

Case 2. A western city was unable to get fire alarm boxes without an A-2 rating. They made two attempts to get this, but finally had to give up.

Case 3. A midwestern city has had two fire alarm boxes on order for nine months under an A-10 rating. The fire alarm boxes have still not been delivered. In this city is an iron ore mining industry.

Case 4. An eastern city in which are located numerous plants making airplanes, chemicals, beds and many other vital war needs applied in December, 1941, for fire alarm boxes to replace damaged ones. It was impossible to secure priority for the boxes.

Case 5. A northern New England city which must protect a number of shipyards, drydocks, a steel company filling Navy and maritime needs, a pipe line terminal and two military reservations with some 160 buildings, has tried to replace fire alarm equipment burned out by high tension in December, 1941. Central station radio equipment also burned at that time and it has been impossible to replace it.

Case 6. A Pacific Coast city applied on January 6, 1942, for a compressed air horn, a compressor, transmitter, character wheels and alarm room equipment. Their application was turned down on February 23, 1942.

Case 7. An eastern city in which are located a number of oil refineries; an ordnance plant; iron works plants making parts for tanks, machine guns, gun mounts, naval guns, anti-tank guns, etc.; and a large pump station of crude oil pipe lines was recently refused priority rating for take-up reel to complete installation of new fire alarm register system at fire headquarters.

Case 8. A midwestern city in which is located a radio school operated by the Government and a number of vital defense industries has been refused priority for 2,500 feet of six pair cable and 3,250 feet of two pair cable for the fire alarm system.

The W. P. B. Has Shut Down on New Aerial Ladder Trucks, Yet Fire Fighting Service Continues to Take Toll of These Machines. Here Is One Wrecked by a Falling Wall at a Fire in New York City on June 20.

Case 9. An eastern city manufacturing war products such as guns, oils and lubricants, copper, etc., has been turned down by the War Production Board for fire alarm boxes, six-circuit fire alarm board and an auxiliary gas electric generator.

Case 10. A central city in which are plants manufacturing "sub chasers," chemicals, airplane parts, machine gun parts, tractor parts, transformers, truck parts, parts for ships, etc., was turned down by the WPB for fire alarm boxes.

Case 11. An eastern city has been refused a priority rating for 25,000 feet of badly needed copper wire for

its fire alarm system. The city is without any wire. Plants in this city manufacture die machines, submarine detectors, cloth for the Army and Navy and cement.

Case 12. In addition to its plants making submarines, mine-sweepers, sub chasers, shells and fittings, a number of Navy warehouses, this midwest city must furnish protection to 400 defense homes on eighty acres. All wiring for the fire alarm system has been installed, but to date boxes have been denied. There are about 2,000 people in this defense project and very few of them have telephones.

Case 13. A southern city with a number of plants manufacturing cloth, gun bases, boom-carriers, mattresses, metal articles, etc., has been turned down on wire for installing fire alarm boxes in defense plants.

Case 14. An eastern city manufacturing such defense materials as shells, sheet steel, rubber products, glass, oil products, applied on March 2, 1942, for four fire hydrants and on March 13 for hydrant packing. In order to purchase this material, the city must have an A-1-J rating which it is unable to receive.

Fire Hydrants, Too, Unessential?

Case 15. A midwestern city with about fifty plants making such war products as machine tool parts, ammunition parts, airplane fuel pumps, airbrakes, springs, etc., has been turned down on fire hydrants. These are for the protection of defense plants and defense homes.

Case 16. Another city in the Midwest has been refused priority on fire hydrants, although there are a number of plants making such vital materials as ships, tanks, shovels and other products. In addition they must protect a defense housing project.

Case 17. A New England city in which rubber boats, airplane cables, life boats, castings for the Army and Navy and numerous other materials are manufactured, has been refused priority on hydrants which is one of the great needs of the city, as it is impossible to get hose and short lines must be used.

Case 18. A southwestern city in which are shipyards building mine sweepers and merchant cargo vessels, refineries making gasoline, and oil, various machine shops working on defense work, many mills fabricating wooden material for boats, rice mills, defense housing projects, etc., has been unable to get expansion rings for hose or couplings for replacement without an A-1-K priority and cannot get anything better than an A-10, which is useless.

Case 19. A midwestern city applied on May 20, 1942, for 1,000 feet of 2½-inch hose. This request was denied, although there are plants making tools, dies, etc.

Case 20. Another midwestern city attempted on May 12, 1942, to procure a priority number that would release fire hose, but have been unable to get it. In this city are manufactured tools and gauges for war work.

Case 25. An attempt on the part of an eastern city to obtain 1,180 sets of coupling has been of no avail. In this city are numerous plants making motors, airplanes, as well as the Signal Corp of the Army, the U. S. Marine Quartermasters depot, the U. S. Army Quartermasters Depot and various oil refineries.

Case 21. A southern city in which a Government airport is nearing completion and which also has a number of fruit canning and fruit juice plants has had on order since January 26, 1942, one standard length of five-inch hard suction hose. This hose was ordered to replace a broken length and not as an extra. Not having an extra length on hand when the break occurred, the department is left with only one length of suction hose on a 1,000-gallon pumper. As there are a hundred lakes in the territory covered by the city, there is a lot of property which requires the drafting of water to protect it against fire. In most cases it requires two lengths of suction hose to do so.

Case 22. A New England town has tried to get 2½-inch hose. The fire chief has applied twice for priority for the hose but has been turned down. This hose is to replace hose lost throughout the year. In this town are a number of defense plants making lighting equipment for aircraft and tank factories, electric fittings for battleships, searchlight equipment, etc. In addition there is a Navy yard, a number of arsenals and a munition plant located within the limits of the town.

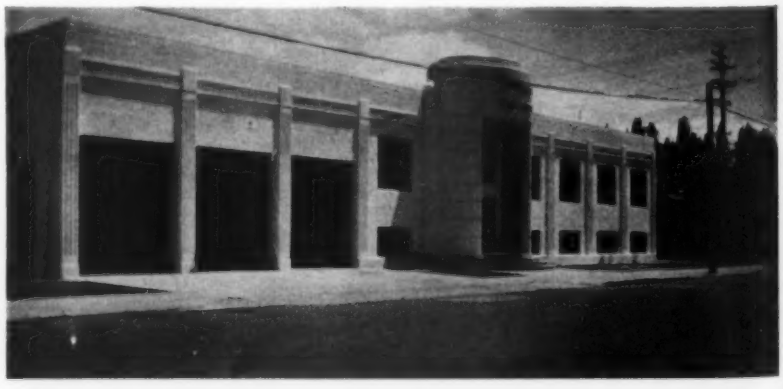
Case 23. A southern city in which is located a twin-engine flying school, one of the largest of its kind in the country, has applied for a priority rating for cellar nozzles, expansion rings and 900 feet of hose. This rating has been refused.

Case 24. A midwestern city whose defense plants make such vital materials as shell lathes, marine engine bases, shell casings, telegraph instruments, small motors, submarine rudders, etc., has not been able to secure brass hose expansion rings.

Sabotage, Though Unintentional

Yes, the fire service today is being sabotaged unintentionally by federal bureaus. Instead of increasing the strength of the fire departments to meet the increased demands for fire protection and the growing hazards, fire departments are being denied apparatus needed to replace machines, some of which are twenty years of age or older.

There can be but one solution to the problem: priority restrictions on fire apparatus and equipment must be eased. The fire service will do its duty and carry on to the best of its ability and its equipment. But, if through failure of the Government to permit fire departments to keep their equipment up to strength, large fires occur in vital defense industries, the blame must rest not with the fire service but with the federal bureaus who are crippling the fire service by denying needed improvements.



Sparks, Nevada, Proud of New Fire Station

Last year, Sparks, Nevada, dedicated a new fire headquarters building. As shown in the illustration herewith, the structure would do justice to even the larger American city. J. B. Hobson is Chief at Sparks.

Fire Departments Must Be Brought To Full Strength

Change of Attitude Toward Fire Service on Part of Official Washington Must First be Accomplished

THIS article, which is based on a brief prepared by the Headquarters Office of the International Association of Fire Chiefs, is designed to direct attention to an alarming condition which is developing in the fire defenses of the nation.

In preparing these data, the Association had but one thought in mind—to bring about a reinforcement in the mechanical strength of fire departments which is most imperative at this time.

Fire Losses Increasing

As shown by the table below, fire losses during the three months since the Pearl Harbor attack have increased very rapidly over the corresponding months of the previous year. The figures are made up from estimates of fire losses compiled by the National Board of Fire Underwriters and are based on incurred insurance losses plus an allowance for unreported and uninsured losses. As the Board figures did not include the "Normandie" loss, an estimate of this loss was added to the table.

1940 Losses	
December	$28,617,000
1941 Losses	
January	$26,470,000
February	26,102,000
March	31,471,000
April	29,330,000
May	25,637,000
June	24,943,000
July	23,698,000
August	24,122,000
September	24,668,000
October	30,833,000
November	23,822,000
December	31,261,000
1942 Losses	
January	$35,565,000
February	30,819,000
(Plus $20,000,000 "Normandie" Loss, Totalling $50,819,000)	

Defense Industries Are Suffering Real Losses

A large percentage of fires which have occurred in recent months, and particularly since Pearl Harbor, have been in defense industries. And the largest fires have involved manufacturing and materials vital to war preparation.

Defense losses have already been disastrous; increasing numbers of these fires may be expected in the future.

The tabulation following gives but a partial list of defense fires occurring since June 1, 1941.

Partial List
Defense Industry Fires
(June, 1941, and after)

Philadelphia, Pa., lumber yard	$2,500,000
Pittsburgh, Pa., steel plant	200,000
Jacksonville, Fla., warehouse and pier	80,000
Ketchikan, Alaska, pier and warehouse	65,000
Brooklyn, N. Y., army transport	
Perth Amboy, N. J., tanker	
Hopewell, Va., chemical plant	
Franklin, Mass., gun wadding plant	
Philadelphia, Pa., waste plant (supplied Frankford arsenal)	
Nashville, Tenn., transport equipment	65,000
Westville, Ind., oil refinery	50,000
Union City, Tenn., packing plant	70,000
Knappton, Wash., sawmill	80,000
Atlanta, Ga., packing plant	50,000
Manchester, N. H., sawmill	50,000
Seminole, Okla., oil refinery	1,500,000
Dee, Ore., lumber	50,000
Mt. Vernon, Wash., iron works	80,000
Brooklyn, N. Y., pier and steamship	2,000,000
El Paso, Tex., railroad shops	400,000
Quincy, Mass., planing mill	125,000
Klamath, Ore., lumber	100,000
San Francisco, Cal., packing plant	170,000
Paterson, N. J., lumber mill	160,000
Winston-Salem, N. C., hangar and planes	50,000
Blaisdell, N. Y., abrasives plant	80,000
Seattle, Wash., lumber mill	250,000
San Jose, Cal., magnesium plant	(loss not given)
Chicago, Ill., warehouse	800,000
Whiting, Ind., oil refinery	50,000
Charlestown, Mass., warehouses, trucks and freight cars	1,500,000
Cleveland, Ohio, bronze and aluminum plant	1,800,000
Port Costa, Cal., government grain storehouse	1,000,000
Fall River, Mass., rubber plant and rubber storage (government)	12,000,000
New London, Conn., pier and railroad cars	171,000
Indianapolis, Ind., rubber laboratories	125,000
Laurinburg, N. C., warehouse	65,000
Willow Ranch, Cal., lumber mill	125,000
New Hudson, Mich., truck plant	150,000
Fairfax, S. C., cotton warehouse	65,000
Portland, Me., defense machine works	400,000
Keokuk, Ia., calcium carbide warehouse	100,000
Lansdale, Pa., defense work plant	1,000,000
Columbus, Ohio, lumber yard	125,000
Farmville, Va., power plant	225,000
Fort Worth, Tex., warehouse at defense plant	100,000
Santa Barbara, Cal., lumber yard	125,000
Edgewater, N. J., chemical plant	300,000
Manchester, N. H., defense textile mill	50,000
Newark, N. J., precision instrument plant	80,000
Calumet, Mich., armory	50,000
Raeford, N. C., power plant	50,000
Claymont, Del., oil storage and pier	225,000
East Cambridge, Mass., Federal surplus commodities warehouse	80,000
Syracuse, N. Y., machine works	200,000
Baker, Ore., planing mill	170,000
Tacoma, Wash., lumber mill	250,000
Sacramento, Cal., oil storage tanks	100,000
Worcester, Mass., aviation trade school	65,000
S. S. Normandie	20,000,000
Hyannis, Mass., steel and cement plant	170,000
Davenport, Ia., armory	65,000
Springfield, Mass., arsenal	100,000
Brooklyn, N. Y., steamship and cargo	(loss not given)
Bridgeport, Conn., ammunition plant	100,000
Akron, Ohio, plant manufacturing defense housing equipment	300,000

Effect of Fire Losses on National Defense

A single fire in a vital defense industry might set the nation's war program back weeks, if not months.

A typical example of what one fire might do was the rubber fire at Fall River, Massachusetts. Here 18,000 tons of crude rubber in storage was destroyed. When it is pointed out that an average automobile tire requires but six pounds of crude rubber, the magnitude and implications of this single fire can be appreciated.

The fire in the S. S. "Normandie,"

too, serves as another example of calamitous fire losses. This big, fast liner was about ready to go in service as a troopship (with a possible capacity of 25,000 soldiers) when fire put it out of commission—possibly permanently.

The hundreds of defense industry fires that have occurred since the start of the war have not only caused millions of dollars loss in vital war supplies and materials but have set back the defense program to a marked degree.

Every fire loss today is a national loss!

Defense industry destruction is a direct national loss.

The loss of an essential civilian industry is a national loss, for no useful products can be wasted during an all-out war without paying the penalty of shortage, hardship or dissatisfaction.

One Thousand Tons of Rubber was Destroyed by this Fire at Akron, Ohio

Destruction of places of human habitation represent a direct national loss. There is today a shortage of building equipment and materials, and the demands of defense housing are increasing rapidly. When a house or apartment burns, there is little or no salvage; and new accommodations must be found, or provided, for the homeless. Furthermore, proper housing is needed to maintain civilian morale.

The destruction of a non-defense industry is a national loss, for a non-defense plant of today will be a defense plant of tomorrow, as the all-out war program develops.

The staggering annual fire loss of this nation, totalling $250,000,000 in peacetime, represents a serious drain on national wealth in time of war, when every dollar is needed for war effort. The destruction of vital materials and the fruit of labor and the loss of production and employment are more serious when war demands are so heavy on the resources of the nation.

And that huge total promises to be far greater during this and succeeding years, unless fire departments are tremendously strengthened.

Fire defense is national defense. Unless war munitions factories are enabled to run without interruption, whether due to stoppage of machines or destruction of materials by fire, serious harm may be caused to defense efforts. And no other agency has a greater potentiality for damage than does uncontrolled fire.

Government's Fire Defense Plans Are Limited in Scope

The Office of Civilian Defense is making emergency fire apparatus and equipment available to some cities. The cities to receive allotments have been selected by the Army.

They include defense cities and most other large cities lying within 300 miles of the Atlantic or Pacific coasts and within the same distance of the Gulf of Mexico. Cities under 10,000 population and many over that size located beyond the defense zones are left out of the plans.

By the very specifications set forth by the Army for participating cities, it is evident that the Army officials had in mind only the protection of these municipalities against air raid fires.

But the great increase in fire losses in war and other industries since Pearl Harbor was not due to enemy air attacks. It was, and will likely continue, to be caused by the following:

1. Congestion in plants
2. Haste
3. Green workmen
4. Carelessness
5. Deliberate fire setting (sabotage)

And on these grounds either fire equipment should be made available by the O. C. D. to all cities supporting defense or essential industries or else these cities should be granted priority to purchase for themselves such fire apparatus as they sorely need.

Other cities, too, should be enabled to purchase the fire apparatus they need. These would include cities having civilian industries today which will likely be defense industries tomorrow, and cities which serve as bedrooms for neighboring defense cities.

With regard to the latter, they must be kept intact. The government is appropriating huge sums for defense housing; such housing must therefore be vital. And it's cheaper to buy and maintain fire protection for a city than to rebuild the city. Thus the "bedroom" cities must be permitted to buy fire apparatus.

Air Raid Fires

While no sustained or mass aerial attack by the enemy is anticipated, token or "stunt" attack by planes carrying incendiary bombs is possible and likely.

As a single bomber may cause over a hundred fires, it would be considered profitable by the enemy to sacrifice a few planes in the hope that they might cause spreading fires before landing and surrendering to United States' forces. Of course, it is assumed that the Axis Powers have no bombers that can cross and recross the ocean with a bomb load.

No Fire Department Can Handle a Multiplicity of Large Fires

No American fire department could handle one hundred simultaneous spreading fires today with its present apparatus.

No fire department in a city of 500,000 population could handle five simultaneous spreading fires.

No fire department in a city of 200,000 population could handle three simultaneous spreading fires.

But with departments brought up to strength by the addition of modern, powerful apparatus, with adequate hose carrying capacity, they would have a better chance of preventing conflagrations.

Large defense industries, if involved by threatening fires, require fire engines of great power and discharge capacity.

O. C. D. Pumpers

The O. C. D. furnishes three types of pumpers for fire fighting service:

(a) Front mounted pump
(b) Skid pump, with gasoline motor
(c) Trailer pump

The front mounted pump, a 500 g.p.m. centrifugal pump, is to be furnished cities to be mounted on the front ends of municipal utility or other municipal trucks.

Regarding these units, the Board of Directors of the International Association of Fire Chiefs in a communication to the O. C. D. recently stated:

"It is felt that the provision of front drive pumps to be attached to municipal utility and other trucks of doubtful operating condition is open to question. It is the opinion of the Board that if front drive pumps are supplied, they should be incorporated as part of units of new commercial chassis of proper power, if it is at all possible for the Government to secure and supply these machines."

The skid pump, on the other hand, is equipped with a new gasoline motor capable of driving the pump at capacity. Its one serious drawback is its weight—1400 pounds.

It is supposed to be carried on a municipal utility or other municipal truck when transported for use.

But there are few, if any, cities having spare trucks to carry these units alone, so the units would have to be loaded on the trucks each time they were needed—if the trucks were on hand when the call came. The time element in loading the heavy unit is a serious factor.

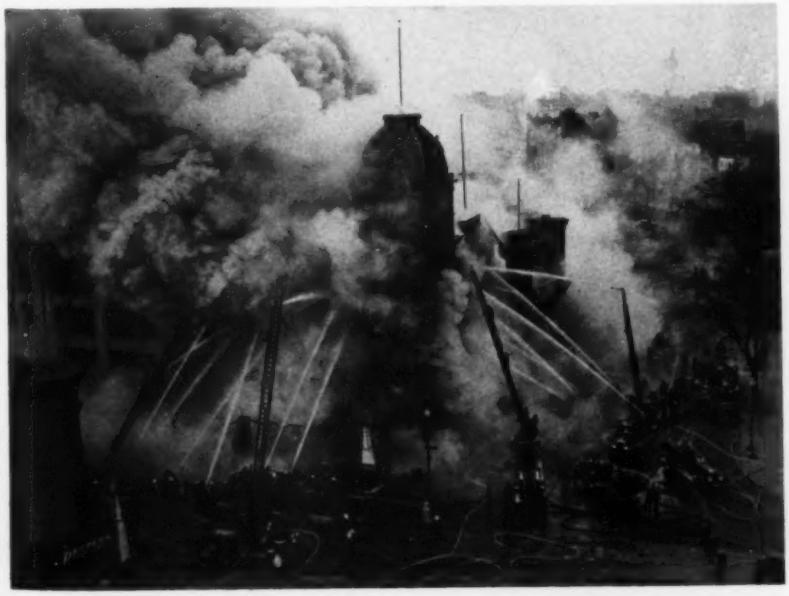
The trailer pump, though weighing over 3000 pounds, should prove satisfactory for the purpose for which provided—air raid protection. Consisting of pump and motor, it is reliable in operation.

But all three of these units are intended for air raid or other emergency incident to war and are not to be called into use except in such emergencies.

Departments Must Be Brought to Full Strength

The regular municipal fire apparatus, on the other hand, must continue to serve day in and day out, and must serve as the sole basis of fire protection except during air raids or other war emergencies. Therefore, municipal fire departments must be kept up to full mechanical strength. And in this connection, the United States Office of Civilian Defense, in a pamphlet titled "Fire Defense Organization" states:—"No municipality or local Defense Council should delay even a day in bringing the regular fire department up to full peacetime strength. Most effective use of the auxiliary force can only be made if the regular department has the full complement of men and equipment."

Motor fire apparatus builders are not taxed to capacity today. In fact, they are operating at not more than 75% capacity, so that the manufacture of the needed fire trucks could be carried out without difficulty.



Powerful Fire Apparatus is Needed for Such Fires as This. Makeshift Machines will not Fill the Bill!

Critical Materials Shortage Held Cause of Fire Apparatus Restrictions

Shortage of critical materials, and especially rubber, is generally held as the reason for restrictions now being applied to the procurement by municipalities of fire apparatus.

But granting priorities to cities for purchase of needed equipment would not represent an appreciable increase in the demand for these materials over that required for O. C. D. engines.

Take rubber, for example. Whether the tires are on municipal utility trucks or are on fire apparatus, there is an equal wearing away of rubber per mile traveled if trucks are of like weight. Where skid pumps are employed, the utility truck may not be sufficiently large in body or weight capacity to carry both unit and hose. In such case the hose will have to be carried in a separate truck. In this instance the wear on eight tires will total more rubber than on the six tires of a four-wheel fire truck.

As far as other critical materials are concerned, more are required for a skid pump and motor, a truck to haul the unit, and a truck to transport hose, personnel and equipment than for a complete fire truck.

Rubber Demand for Fire Apparatus

From a nationwide survey recently made by FIRE ENGINEERING, it is estimated that 2,000 completely equipped fire trucks would be needed during the next twelve months to replace obsolete and unserviceable apparatus and bring the Fire Service of the nation up to full strength mechanically.

Allowing 150 pounds of crude rubber per set of six tires, 150 tons of crude rubber is all that would be needed for the 2,000 fire trucks.

If four-wheel fire trucks are purchased, 100 tons of crude rubber would be needed for the 2,000 units.

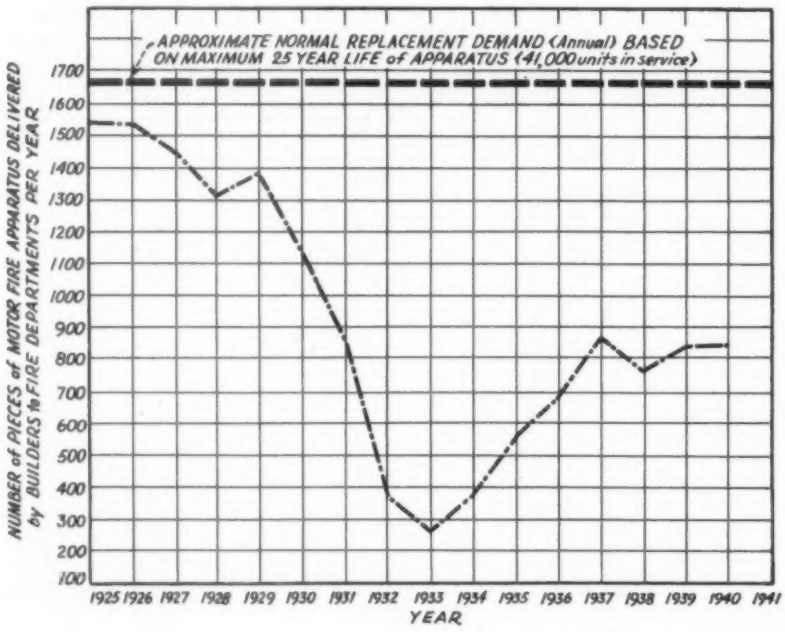
In either case, it is a mighty small premium to pay for insurance against disastrous fire!

18,000 tons of crude rubber was destroyed in a single fire in Fall River last Fall; 1,000 tons of scrap rubber was destroyed in a fire at Akron, Ohio, last Spring.

Many garages have burned during the past year, destroying thousands of serviceable tires.

Strengthened fire protection will save far more rubber and other critical materials than would be needed in the production of all the apparatus required to modernize all fire departments from coast to coast.

There are no priorities on fires! They will continue to occur; but proper fire protection can minimize the losses.



Number of Pieces of Motor Fire Apparatus Delivered by Builders to Fire Departments per Year

(From Reports of Shipments, Fire Extinguishing Equipment, Dept. of Commerce, Bureau of the Census

Year	Total
1925	1,538
1926	1,528
1927	1,455
1928	1,311
1929	1,370
1930	1,155
1931	869
1932	361
1933	257
1934	375
1935	540
1936	679
1937	863
1938	757
1939	830
1940	*832

* Based on deliveries of first six months of year, as reported by the Department of Commerce.

The answer is simple. Since 1929 most cities have been hard pressed financially, and have repeatedly set aside recommendations of their Fire Chiefs for new fire apparatus, due to lack of funds. Apparatus in service became older; no replacements were made, and the situation became progressively worse until, at the time of our entrance into the war, fire department strength was at low ebb.

With the threat of enemy attack, there was a frantic rush to secure sorely needed replacements in fire apparatus; priorities made this impossible in most cases, and the situation today is critical.

The Only Defense Against Spreading Fires

For big fires, which are threatening to spread, the only defense is plenty of capable fire engines—but which are at hand and are ready to work *without the delay incident to bringing them from neighbors.*

There is not a Fire Chief in this country today who is not aware of the need of additional apparatus if a large number of simultaneous fires should take place, or if there is a large spreading fire on hand.

Why, then, are not fire departments up to strength today? it may be asked.

Recent Fires Resulting in the Destruction of Rubber

RUBBER PLANTS	Tons of Rubber Destroyed
Canton, Mass.—Rubber manufacturing plant	1,000
Morenci, Mich.—Rubber products plant	500
Indianapolis, Ind.—Rubber laboratory and stored rubber	200
Fall River, Mass.—Firestone plant and federal rubber storage	18,000
Akron, Ohio — Scrap rubber storage	1,000

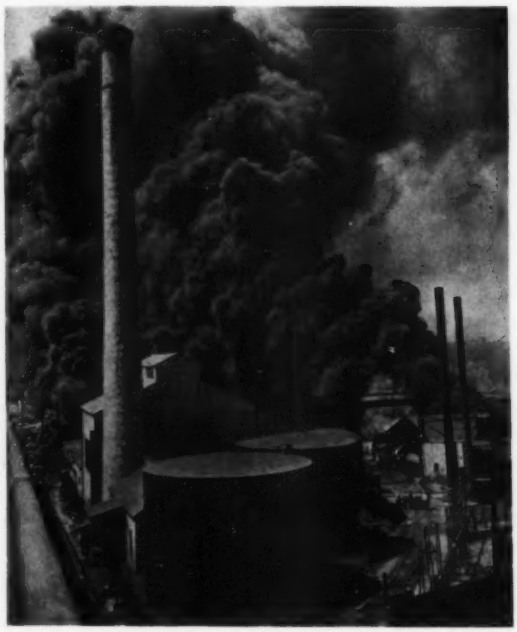
Recent Garage Fires (involving trucks, buses and pleasure cars)

	Losses in Dollars
Somerville, Mass.	$200,000
Alton, Ill.	50,000
East Chicago, Ind.	75,000
Chicago, Ill.	100,000
Porterville, Pa.	50,000
Indianapolis, Ind.	80,000
Denver, Colo.	50,000
Macomb, Ill.	50,000
Jamestown, N. Y.	50,000
Missoula, Mont.	80,000
Dartmouth, Mass.	50,000
Charlotte, N. C.	80,000
Columbia, S. C.	50,000
Salem, Ill.	50,000
San Francisco, Cal.	50,000
Chowchilla, Cal.	65,000
Forsythe, Mont.	50,000

Here's a Fire that Destroyed 18,000 Tons of Crude Rubber—enough to Supply Tires to 240,000 Fire Engines (Six to each Machine). There are only 41,000 Fire Engines in Service in the United States Today.

All-Out War Effort Demands All-Out Fire Protection!

In the nation's efforts for all-out war preparation, there must be no interruption in production; there must be no destruction of vital materials and machines. *Fires must be checked before they reach large proportions.*



Chemicals for War Purposes Make Fires Which are Difficult to Control. Sturdy, Powerful Fire Apparatus and Plenty of Water Constitute the First Line of Defense.

Peacetime fire fighting facilities cannot handle wartime fires. The tremendous program of production, shipment and storage of military supplies demands greatly augmented fire protection equipment.

Today, fire defense is national defense.

Restriction of Apparatus Manufacture Endangers War Production Program

There can be no restriction on production of fire fighting machines without the risk of disastrous fires. The Fire Service must be brought up to full strength!

It is because the International Association of Fire Chiefs is fully aware of the grave problem of fire defense, and the deplorably weak condition of many American fire departments today, that they strongly urge the easing of priority restrictions on the purchase of fire apparatus so that prompt procurement of vitally needed fire fighting machines can be attained.

Fire Sweeps Department Store

A spectacular early morning six alarm fire which raged for over four hours in the high value business section of East Liberty, Pittsburgh, Pa., swept through the building of the Schulte-United Inc., a Junior Department Store, and for a time threatened to spread to the adjoining structures of the F. W. Woolworth Company 5 & 10 cent store and the new C. G. Murphy Company 5 and 10 cent store, before it was brought under control after a hard desperate battle in heavy clouds of stifling acrid smoke by eighteen fire companies called on six alarms and a special call, which were sounded on quick succession following the discovery of the fire.

The fire which originated in the basement of the Schulte-United Store, from some cause unknown, was first discovered shortly after 8:00 A.M., by W. H. Watson, Assistant Manager of the F. W. Woolworth Co.'s store, who telephoned the alarm to the Central Fire Alarm Office. At 8:18 A.M., following the telephone call Engine Company No. 8 and Truck 8 were sent on a "Still Alarm" to the Schulte store.

Immediately after their arrival Captain Ralph Longmore of Engine Company No. 8 had one of his men turn in the first alarm from the street box at 8:21 A.M., which brought the rest of the first alarm assignment, Engine Companies 16 and 28 and Battalion Chief, James T. Coslett of the Third Battalion.

The entire basement of the Schulte building was a raging furnace from end to end, and the flames rapidly spreading to the first floor, when the first alarm Companies arrived and broke into the building, proving that the fire evidently had been smouldering for a long while before breaking out in all its fury.

Chief Coslett immediately sent in the second alarm at 8:24 A.M., which was followed by the third at 8:27, the fourth at 8:34, the fifth at 8:36, a special at 8:45 and the sixth alarm at 8:59 A.M., the six alarms and the special call, bringing in all, fifteen engine companies; one squad company and two truck companies; with a fire fighting force of ninety firemen, including Chief of Department, Edward J. Kerr and Senior Battalion Chief, John J. Moroney, both of whom responded on the second alarm; and twenty-one pieces of motor apparatus, five 1000 gallon pumpers, nine 750 gallon pumpers and one 350 gallon pumper, one deluge combination water tower and turret wagon, two combination hose and turret wagons, a squad wagon and two 75-foot aerials.

Under the direction of Chief of Department, Edward Kerr and his Chief Officers, the firemen fought the stubborn smoky fire from the ground, from aerial and ground ladders, from the fire escape on Kirkwood Street, from the interior of the building as well as from the roofs of adjoining structures. With no entrance of any kind to the basement from the front or rear of the building and no dead lights in the sidewalk, the firemen found themselves up against a hard job in reaching the seat of the fire.

In controlling and extinguishing the fire, the fire-fighters used seventeen powerful streams, which included two 1½-inch multiversal streams, one in front of the building and one in the rear; one 1¼-inch tower stream and two 1 7/16-inch deck turret streams from the combination water tower and turret wagon in front of the burning building, with fifteen pumpers supplying the pressure through 13,000 feet of 2½-inch hose. Also used were 582 feet of ladders and 350 feet of 1-inch lead line hose.

During the hard battle by the firemen, which lasted most of the day, very little flame was visible from the street through the great clouds of smoke that rolled from the building for hours and carried for squares by a brisk wind.

WILLIAM E. PATTERSON

View of Fire in Schulte-United Store

Note water has not yet been turned into the two lines leading to combination water tower. Six lines were connected to the tower.

Practical Training for Auxiliary Firemen

Fourth of a Series of Articles Devoted to This Important Phase of National Defense

By FRED SHEPPERD
Editor, FIRE ENGINEERING

IN this article the fighting of fires, other than those involving incendiary bombs is discussed. The various methods by which fire travels, as well as the application of various extinguishing agents to different classes of fires, are reviewed.

Questions and Answers

Q. Give three methods of extinguishing fire.

A. (1) Cooling the burning materials down to a point below their reignition point (this includes the so-called "quenching" effect of water).

(2) Excluding sources of oxygen from the burning material and thereby causing cessation of process of combustion. This is called "smothering" a fire.

(3) Snuffing out the fire, which consists principally of mechanically separating the flame from the material which is burning.

Q. Give one example of each method.

A. (1) Putting out a bonfire with a bucket of water.

(2) Covering a vat of burning tar with a piece of sheet metal.

(3) Blowing out a burning candle.

Q. Are there any other fire extinguishing agents than water that produce a cooling effect?

A. Yes. Streams from chemical extinguishers as well as carbon dioxide snow exert a cooling effect, but it is a minor factor. In fire fighting operations the cooling of burning materials is accomplished almost entirely by the use of water.

Q. What are some of the commonly employed methods of smothering fires as employed by professional fire fighters?

A. Use of carbon dioxide gas, which contains no free oxygen, to surround the burning materials and thus exclude air (which would supply oxygen to the fire); surrounding the fire with steam, which acts similarly to carbon dioxide gas; use of carbon tetrachloride which generates gas when brought into contact with fire, the gas acting similarly to carbon dioxide; covering the burning material with wet burlap bags, sand, soda, sawdust, etc., to exclude the air; use of chemically or mechanically produced foam to cover burning material and thus prevent the oxygen of the air from coming in contact with the fire.

Q. Is the process of snuffing out fires widely used?

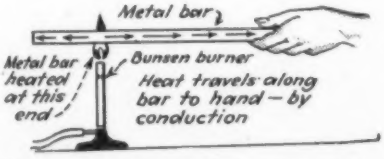
A. No. It is, however, quite frequently employed for extinguishing gas well fires, when the fire is blown out by a blast from dynamite or other explosive.

Q. How may fire (heat) travel from one point to another?

A. By any or all of the following means: (1) conduction, (2) radiation, (3) convection.

Q. Explain each method and give an example of fire extending by such method.

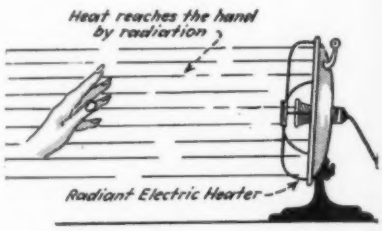
A. (1) Heat is said to travel by conduction when each particle



How heat travels by conduction: each particle of material is heated by the particle next to it which is nearer the source of heat.

transfers heat to the particle next to it, the heat travel always being from the hotter to the colder particle. The travel of heat along a stove poker handle is a good example of conduction. A good example of fire extending by means of conduction would be the travel of heat along a metal girder and carrying fire through a wall thereby.

(2) Heat travels by radiation in very much the same manner as light travels—in straight lines. Heat from the sun is transmitted to the earth by radiation. Buildings across a street from a hot fire may be ignited by radiated heat.



Radiated heat travels in straight lines like light.

(3) When heat is transferred by the motion of heated matter, as by a current of hot air or by the flow of hot water through pipes, it is said to be transferred by convection. At fires in buildings fire may be carried from lower floors to upper floors by means of heated gases which rise through stair wells, elevator shafts or other vertical shafts. This process of heat transfer is convection.

Q. In general, what different types of fires are commonly encountered by fire fighters?

A. There are three general classes of fires, namely: Class "A" fires, which are those involving ordinary combustible materials where the quenching and cooling effects of quantities of water, or solutions containing large percentages of water, are of first importance.

Class "B" fires, which are those involving inflammable liquids, greases, etc., where a blanketing effect is essential.

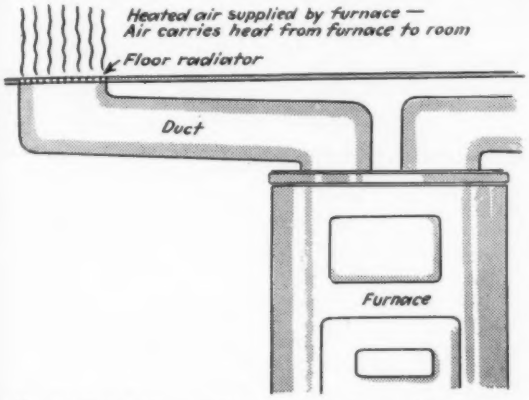
Class "C" fires, which are those involving electrical equipment where the use of non-conducting extinguisher liquids is of first importance.

The above classification of fires

is set forth by the National Board of Fire Underwriters.

Q. What extinguishing agents are commonly used by fire departments in connection with fires included above?

A. The following extinguishing agents are commonly used by fire departments. While not all of them are carried on apparatus, or are provided by the municipal fire departments, still they are encountered and used by the fire fighting forces:



The heating furnace, with hot air ducts, provides a good example of heat transfer by convection. Heated air carries heat from one point to another.

- Fire pails and bucket tanks
- Carbon tetrachloride extinguishers
- Soda and acid extinguishers
- Foam generators
- Carbon dioxide extinguishers
- Foam extinguishers
- Pump tanks
- Sand fire pails
- Steam
- Calcium chloride (frost proof) extinguishers
- Soda and sawdust
- Hose streams
- Stirrup pumps
- Knapsack pumps

Q. On which types of fires are pails and tanks (of water) commonly used?

A. These appliances are effective, and commonly used, on fires in ordinary combustible materials, such as wood, paper, textiles, rubbish, etc., for instance, on small fires, of the Class "A" type where the quenching and cooling effect of quantities of water solutions or water is of first importance. They are of value also on incipient fires in floors, soaked with oils, greases, etc., where the quenching and cooling effect of the water may be utilized; but are not effective on fires in inflammable liquids, greases, etc., in vats, open vessels, etc., where the blanketing effect is essential.

Their use in connection with fires in electrical equipment, such as panel boards, switch boards, motors, and the like is not recommended. In some cases fires in electrical equipment may be such that the quenching and cooling effect of large quantities of water or solution containing large percentage of water is necessary. In such cases equipment should be electrically "dead" before applying water or water solutions.

Inaccuracy of direction reduces the effectiveness of the water pail as a fire extinguisher.

The use of buckets is limited to fires which may be readily reached by liquids thrown or poured from a pail.

Q. On which types of fires are soda and acid extinguishers considered effective?

A. These appliances are effective on incipient fires in ordinary combustible materials, such as wood, paper, textiles, rubbish, etc., for instance, on small Class "A" fires, where the quenching and cooling effect of quantities of water or solutions containing a large percentage of water is of first importance.

They are of value on incipient fires in floors soaked with oil, grease, etc., where the quenching and cooling effect of the water may be utilized; but are not effective on fires in inflammable liquids, greases, etc., in vats, open vessels, etc., where the blanketing effect is essential. For use in connection with fires in electrical equipment such as panel boards, switch boards, motors, and the like, they are not recommended.

Stream from a soda and acid extinguisher should be directed at the base of the fire, so that it will strike the materials which are burning.

In some cases, fires in electrical equipment may be such that the quenching and cooling effect of large quantities of water or solutions containing large percentages of water is necessary. In such cases equipment should be made electrically "dead" before applying water or water solutions.

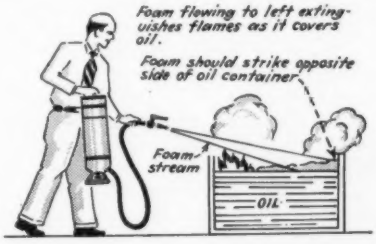
Soda and acid extinguishers are dangerous to use around electric fires where high voltages are present.

Fresh water is a comparatively poor conductor of electricity as compared to the solution in a soda and acid extinguisher.

Soda and acid extinguishers have this advantage over buckets: the force, length and duration of the stream are not dependent upon the operator. These appliances are readily operated while being carried about.

Q. Where are foam fire extinguishers particularly effective?

A. They are particularly effective on fires in small quantities of inflammable liquids, greases, etc., in vats or other open vessels or on floors, etc., for example, on small Class "B" fires, where the foam formed by the mixing of the two solutions may be retained as a blanket on the burning material.


Foam flowing to left extinguishes flames as it covers oil.
Foam should strike opposite side of oil container
Foam-stream
Oil

Stream from foam extinguisher should not be directed into burning oil; foam should strike opposite side of container and flow back across oil surface.

For use in connection with fires in electrical equipment such as panel boards, switch boards, motors, and the like, they are not recommended.

Q. On what types of fires are pump tank extinguishers commonly used?

A. These appliances are effective on incipient fires in ordinary combustible materials such as wood, paper, textiles, rubbish, etc., for example, on Class "A" fires where the quenching and cooling effect of quantities of water or solutions containing large percentages of water is of first importance.

They are of value on incipient fires on floors soaked with oils and greases, etc., where the quenching and cooling effect of water may be utilized; but are not effective on fires in inflammable liquids, greases, etc., in vats, open vessels, etc., where the blanketing effect is essential.

Their use in connection with fires in electrical equipment such as panel boards, switch boards, motors, and the like is not recommended, and particularly so where calcium chloride is mixed with the water.

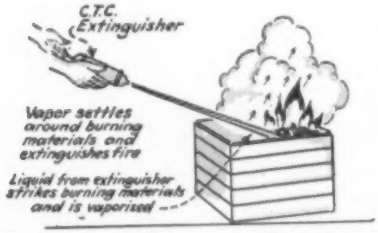
Q. On what types of fires are calcium chloride extinguishers effective?

A. These appliances are effective on incipient fires in ordinary combustible materials (such as wood, paper, textiles, rubbish, etc.) i.e., on Class "A" fires, where the quenching and cooling effect of the water may be utilized; but are not effective on fires in inflammable liquids, greases, etc., in vats, open vessels, etc., where the blanketing effect is essential.

Their use in connection with fires in electrical equipment such as panel boards, switch boards, motors, and the like is not recommended.

Q. On what types of fires are carbon tetrachloride extinguishers effective?

A. They are effective on fires in small quantities of inflammable liquids, greases, etc., in vats or


C.T.C. Extinguisher
Vapor settles around burning materials and extinguishes fire
Liquid from extinguisher strikes burning materials and is vaporized

Carbon tetrachloride, upon striking fire, is vaporized, and vapor so formed smothers the fire.

other open vessels or on floors, etc., i.e., on Class "B" fires, where the gas formed by the heating of the extinguishing liquid may be retained as a blanket on the burning material.

They are effective on incipient fires, in electrical equipment, i.e., on Class "C" fires.

These appliances are adapted for use on automobiles, motorboats, etc.

They are of value, on incipient fires, in small quantities of ordinary combustible material (such as wood, paper, textiles, rubbish, etc.), where the gas formed by the heating of the extinguishing liquid may be utilized; but are not effective on fires where the quenching and cooling effect of water is of first importance.

Care should be taken to ventilate small roms and confined spaces immediately after using these extinguishers.

Q. On what types of fires are sand fire pails effective?

A. These appliances are effective on fires in small quantities of inflammable liquids and greases, on floors, etc., but are not effective on fires in such materials in vats or other open vessels.

They are effective on incipient fires in stationary electrical equipment carrying low voltage, but are not suitable for use on fires in moving parts of electrical machines.

They are not effective in handling incipient fires in ordinary combustible materials (such as wood, paper, textiles, rubbish, etc.) i.e., where the quenching and cooling effect of quantities of water or solutions containing large percentages of water is of first importance.

Their use is limited to fires which may be readily reached by sand thrown from a pail or scoop.

Q. On what types of fires are soda and sawdust effective?

A. These are effective on fires in small quantities of heavy inflammable liquids, greases, etc., in vats or other open vessels or on floors, where the mixture is applied rapidly and is spread over the entire surface, provided it may be retained as a blanket on the burning material.

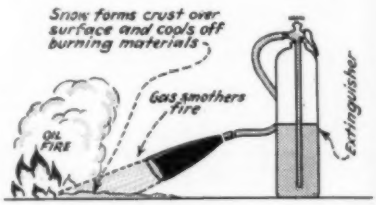
They are not effective on incipient fires in ordinary combustible material (such as wood, paper, textiles, rubbish, etc.), i.e., where the quenching and cooling effect of water or solutions containing large percentages of water is of first importance.

Their use in connection with fires in electrical equipment such as panel boards, switch boards, motors, and the like is not recommended.

Their use is limited to fires which may be readily reached by mixture thrown from a shovel.

Q. On what types of fires is the carbon dicxide extinguisher effective?

A. It is effective on incipient fires in ordinary combustible materials, where there is no appreciable draught, for example, on Class "A" fires. They are also of value on incipient fires in floors soaked with oils and greases, etc., where the cooling and smothering effects of the snow and gas pro-



The gas from a carbon dioxide extinguisher smothers the fire.

duced may be utilized; they are also effective on fires in inflammable liquids, greases, etc., in vats, open vessels, etc., where the blanketing effect is essential.

Their use in connection with fires in electrical equipment such as panel boards, switch boards, motors and the like is recommended.

These appliances are readily operated while being carried about.

Q. When are foam generators used?

A. Foam generators and foam installations are used on Class "B" fires where large proportions have been reached, such as in oil refineries and oil plants in general.

Q. On what types of fires is steam effective as an extinguisher?

A. Steam is effective in fighting oil or other fires provided fire occurs in a closed space where it can be surrounded by steam, and provided there is sufficient steam present and available for use. Steam reduces the temperature of burning materials as well as smothering out fire by excluding the free oxygen of the air from it.

Q. On what types of fires are knapsack and stirrup pumps effective?

A. Approximately the same types of fires as are handled by pump tanks, described previously. The former is widely employed also for controlling grass and brush fires.

Herring Regional Fire Coordinator

Fire Chief Albert Herring of the Murphysboro, Ill., Fire Department, has been appointed Region Fire Coordinator under the Civil Protection Division of the Illinois State Council of Defense.

Coordinator Herring was given direction of five counties: Perry, Randolph, Jackson, Williamson and Union, the area including the Illinois Ordnance Work area in Williamson County.

No Increase in Arson Losses Since Pearl Harbor

Report of N.B.F.U. Committee on Incendiarism and Arson Shows No Growth in Set Fires Since U.S. Entry into War

In its report to the Annual Meeting of the National Board of Fire Underwriters, held in New York City on May 28, the Committee on Incendiarism and Arson of that organization presented some highly interesting and instructive data on control of malicious fire loss. Of particular significance is the Committee's finding that, so far, arson losses have not increased since entry, by this country, into the world war.

Believing that our readers would be interested in the information included in the report, we are reproducing herewith a lengthy excerpt of it.

—The Editor

THE record of investigations in which the agents of the Committee have participated points to the continuance of the conditions which have existed during the past several years, for the crime of arson has not increased and there has been a growing measure of success in prosecutions for this and kindred crimes. In addition to the usual work of aiding in investigations, agents have continued their activities in instructing firemen, interested police officials and newly appointed local and State officers, as well as in stimulating public interest in the suppression of arson and in increasing public knowledge of the part stock fire insurance companies have had in this work.

So Far, No Sabotage or Arson

The probable effect of the entry of the United States into war on the prevalence of incendiary fires has been given much consideration by the Committee. Its first thought has been as to the probability of sabotage, since fire is recognized as the most effective weapon which an enemy of the country might use to impede war production. Officials of the government have stated that there has been no enemy-directed sabotage to date and the Committee does not know of any incendiary fire in an industrial plant in the United States since the declaration of war, with the exception of one or two abortive attempts, which did not damage, by persons of unbalanced mentality. The experience in Canada and in England during the present war and in the United States during the last World War indicates that there is little to fear in this direction. The large increase in employment and the resulting comparatively high average earnings, together with the increasing value of commodities of all types, have tended to lessen fires for profit. War activities in industry in some measure have created conditions which have brought about incendiary fires, as, for instance, in filling stations and garages where the proprietors have been called to service or where the inability to operate profitably has set the scene for fire. However, the aggregate of these cases is not high enough to offset the gain resulting from increased employment, or to bring the level of incendiary fires up to that of the average of the past few years.

Roadhouses and similar places, with patronage depending upon the availability of tires and gasoline, are possibly now more hazardous. Among the classes of risks which perhaps invite special attention are resort hotels, vacation boarding houses and the like. Such indications as so far have been noted tend to suggest that interior and mountain resorts will do an increased vacation business, possibly at the expense of seaside resorts and those places, such as tourist cabins, designed to accommodate transients only overnight.

It is only fair to say, however, that so far the number of incendiary fires is believed to have been somewhat below normal and that the effect of war conditions to date has been to lessen rather than to increase cases of arson.

Conditions are changing almost daily and new businesses and properties are likely to be affected thereby at any time. The Committee feels, therefore, that it is necessary frequently to re-examine risks in the light of current developments, in order to keep informed as to the classes of risks which might welcome fires.

Investigations by Special Agents

During the past fiscal year agents have investigated and submitted reports on 2,481 fires of suspicious origin, 204 less than during the preceding year. The following tabulation shows the number of arrests, convictions and acquittals during the past eleven years in proceedings instituted by public officials after investigations in which the agents participated:

	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941
Arrests	1,249	1,544	1,011	782	697	635	679	667	602	647	602
Convictions	532	580	548	434	379	297	360	379	343	394	400
Acquittals	270	259	234	130	122	84	88	123	89	95	63

From this tabulation, it will be seen that there were forty-five less arrests than in the preceding year, but six more convictions and thirty-two less acquittals. The number of convictions is larger than in any year since 1934, while the acquittals constitute the low mark in our modern records.

Noteworthy Cases

In Nashville, Tennessee, a series of costly fires occurred, the largest doing damage estimated at $150,000. After the last fire, there was questioned a young man who had been active in helping the firemen and had been sent to the hospital suffering from alleged smoke injuries. On the following day, before his record was known, he stole an automobile and became a fugitive from justice. When his record was located, it was found that his criminal career began when he was only nine years of age, at which time he was arrested for set-

ting fire to a school in Evansville, Indiana. This resulted in his being committed to a boys' school for eighteen months. In 1935 he was convicted of second-degree arson at Evansville for setting a fire which caused damage of $11,000 and which was one of a series which he set the same night. He was committed to the Indiana Hospital for Insane Criminals, but on the advice of physicians was released in 1938. Shortly afterwards, a number of incendiary fires occurred in Evansville, of which this man was suspected, but he disappeared before the local authorities could find him.

On learning of his record Federal and Tennessee authorities began an extensive search for him, in the midst of which he walked into the Federal Bureau of Investigation office in Seattle, Washington, and admitted the theft of the automobile and the setting of the fires in Nashville. He was returned to Nashville and sentenced in the Federal court to a total of eight years in connection with the automobile theft and in the State court to five years on each of four arson indictments, to run consecutively, beginning at the conclusion of his Federal imprisonment. He is now twenty-nine years of age. His motive for setting fires is sexual gratification.

Following a fire in a box car at Chehalis, Washington, the fire chiefs of Chehalis and Centralia (where a similar box-car fire had occurred a few nights before the fire at Chehalis) picked up a tramp sleeping near a brick yard at Chebalis. When apprehended he tried to wipe oil off his hands, but a lot of it was found on them and under his finger nails. When questioned by a deputy State fire marshal and one of the agents of the National Board, he promptly confessed setting the two box-car fires and also admitted setting a large number of other fires in Washington, Montana, Minnesota, Maine, New York and Alabama.

On August 9, 1934, he was committed to a State hospital at Augusta, Maine, after having been indicted for setting several forest fires. He was suspected of having set a number of fires which occurred in buildings near the forest fires. He was released from the State hospital on May 15, 1935. He admitted having been committed previously to the Florida State Hospital in Chattahoochee.

On February 10, 1942, he was sentenced to two terms of ten years each, to run consecutively, for the fires at Chehalis and Centralia. He is now forty years of age and believed to be feebleminded.

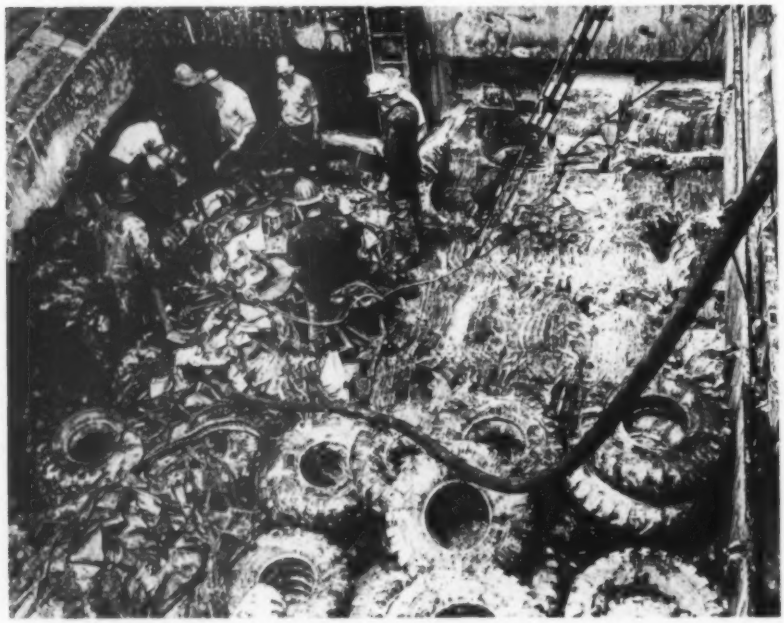
In a Pennsylvania town, the chief of the fire department was arrested in March of this year. He had been a member of the fire department for twenty years, was an active and efficient firefighter and had a good reputation in the community. He became chief of the various companies in January of this year. He confessed to turning in two false alarms and to setting two fires—one of them in a church which he had attended for twelve years without missing a Sunday. This man is forty-two years of age. His fire-setting tendencies have their origin in sexual irregularities.

Persistency Pays Dividends

In metropolitan New York, a fire occurred on June 11, 1937, in a clothing establishment. One of the special agents of the National Board continued the investigation of this fire long after others had lost interest in it, the adjustment made and the loss paid. His persistent work resulted in the indictment of the head of the firm and of his son, and in their conviction in April, 1940. The defendants appealed to the Appellate Division and secured a new trial. In March of this year when the case was called for retrial, the father unexpectedly entered a plea of guilty to arson in the third degree and has been sentenced to from one year and three months to two years and six months. He has been involved in at least six fires, which cost the insurance companies nearly $62,000.

In last year's report mention was made of the conviction of an insurance agent who for many years had been suspected of supplying insurance and counseling policyholders to have fires. With two associates, he was convicted of a conspiracy to defraud insurance companies. This was a novel procedure because the incendiary character of the fire could not be established clearly, so that the fraud had to be proven by actions of the defendants not connected with the origin of the fire. During the past year appeals were taken by the agent to the highest court in Pennsylvania, with the result that the convictions have been affirmed in an opinion which, it is believed, will be of much value in future prosecutions. The agent has been sentenced to a term of eighteen months in jail, to pay a fine of $500 and the costs of the prosecution.

In Mississippi a fire, which is believed to have been incendiary in origin, occurred on August 18, 1940, in a building used as an automobile office, sales room and repair shop. Investigation showed that the company, among other things, had sold practically worthless cars on delayed payment plans; sold the notes taken therefor to a credit company and then had the cars destroyed by fire.



Fire Fights for Hitler

Rubber tires, vital to the United States in its war on the Axis, went up in smoke when this hatch in a ship at a Brooklyn, N. Y., pier caught fire. Fireman are checking over the ruins.

collision, or both. After the investigation was completed the facts developed were laid before a postoffice inspector, with the result that the two principals in the company and two employees were indicted in October, 1941, for using the mails to defraud. All four pleaded guilty on April 8, 1942, in the Federal court. The two principals have been sentenced to two years' imprisonment; one of the employees, to eighteen months' imprisonment, but the execution of the sentence was suspended and the other employee put on probation for five years.

As a result of a fire on January 18, 1934, in an apartment in Brooklyn, an insurance broker and a public adjuster were indicted for arson in the first degree in Kings County, New York. The evidence of guilt was strong, but five separate trials extending over eight years were required before a verdict of guilty of arson in the first degree was obtained by the State as to the broker and the public adjuster. The assured testified for the State. It is believed that the effects of this persistent, patient and thorough prosecution will be very beneficial.

In Sullivan County, New York, in October, 1941, fire totally destroyed a roadhouse, restaurant and bar. Although none of the four companies interested in the loss was a member of the National Board, at the request of the district attorney and in accordance with the principles laid down by the Committee, an agent was assigned to make this investigation. The proprietor was fifty-eight years of age, had practiced dentistry in three mid-western states, had been an instructor in a dental college and a captain in the ambulance service of the United States Army, with a good service record. He had served at one time on the executive committee of a state dental association. A confession was secured from the man who actually set the fire which implicated the proprietor. After a very thorough investigation and an exceedingly hard-fought trial, the proprietor was convicted in February of this year and sentenced to from fifteen to twenty years in the state penitentiary. The actual torch was sentenced to from seven and one-half to twelve year's imprisonment.

Pyromania

For the past several years the Committee has been giving increasingly greater attention to the subject of pyromania. It seems probable that pyromania has been responsible in recent years for between fifteen and twenty per cent of the incendiary fires the perpetrators of which have been definitely ascertained. There appears to be little worthwhile literature on the subject, either from a scientific or a practical viewpoint, and certainly no modern, comprehensive study of it can be found.

Because of these conditions, the Committee concluded an arrangement with Columbia University, acting through its Department of Psychiatry, whereby the Committee has provided the funds with which the Department of Psychiatry, under its distinguished head, Dr. Nolan D. C. Lewis, has undertaken to review all existing literature on this subject, to make a thorough examination of current material and to prepare a treatise which will be as authoritative and conclusive as practicable. It will include practical suggestions for the detection of criminals of this type, suggestions for the methods by which such persons should be handled and the possibility of preventive measures.

Suits for Malicious Prosecution

The most important development in suits of this character was the trial of the suit brought by James H. Bolitho in Morris County, New Jersey, against the National Board of Fire Underwriters, certain of its member companies and police officers of the State of New Jersey, of the County of Morris and of the City of Morristown. The damages for various claims of conspiracy, libel and false arrest totalled $800,000. Before the trial the suits were dismissed as to the member companies. After a thorough trial, lasting nearly a week and a half, the presiding judge, at the conclusion of the plaintiff's testimony, directed the jury to bring in a verdict of no cause for action for each of the defendants above named. The defense of this suit was expensive and it doubtless could have been compromised for a comparatively insignificant sum. It was so entirely without foundation and had been publicized so widely the Committee felt that any compromise was unthinkable and it believes that the result will have a salutary effect in discouraging similar unfounded suits.

One new case of this type was started during the past year in the State of Alabama, against the National Board, certain of its member companies, the Fire Companies' Adjustment Bureau and an individual. So far as is known this suit is without justification and may be designed to force the abandonment of suits brought by the companies to recover money paid under their policies.

Model Arson Law

There was no change with respect to the Model Arson Law during the past year. It is now in effect in thirty-nine states and the statutes in the remaining states are generally satisfactory.

Fire Marshal Law of Florida

Until June 4, 1941, the State of Florida was without any statewide means of investigating suspicious fires. On this date, a statute became effective designating the insurance commissioner as ex officio fire marshal, giving him the authority to appoint deputies and imposing upon him important duties concerning the prevention and investigation of fires and the suppression of arson. One of the agents of the National Board aided in the organization and operation of the new fire marshal's office. It is believed that much good work has been accomplished already and that this new statute will prove of much benefit to the state.

Conclusion

The protection of lives and property in the United States from loss by fire has never been more important than it is at the present time. It is believed that the work of the committee has contributed to a marked degree to such protection in so far as the crime of arson is concerned. Organized gangs of arsonists have been exterminated and the number of individual cases is not increasing. On the other hand, the interest and efficiency of public officials steadily increase. Public sentiment in support of arson prosecutions continues to grow. The members of the staff, located throughout the length and breadth of the country operating under the leadership of A. Bruce Bielaski, are doing an outstanding work in cooperation with prosecuting authorities and public officials.

Rhode Island Chiefs Meet

The monthly meeting of the Fire Chiefs' Club of Rhode Island was held in North Scituate on the evening of May 19. The club was the guest of Chief Crowley and the men of the North Scituate Fire Department.

A real old-fashioned New England bean supper was enjoyed by all the members.

Following the meeting, there was a round table discussion led by Mr. Arnold on forest fire problems that arise throughout the state. The Coventry fire was the principal discussion problem.

Mr. LeRamsdell of the North Scituate Department, showed colored movies of the Coventry forest fire and also of the Fall River conflagration.

GEORGE M. ROBERTSON, JR.

Evidence Necessary to Convict for Arson

By LEO T. PARKER
Attorney at Law, Cincinnati, O.

FREQUENTLY municipal officials become entangled in litigations involving the crime of arson. A most important consideration is the character of the testimony necessary to obtain a valid conviction. Recently, the higher courts have rendered several unusually important decisions on variations of the modern law on this subject. Therefore, we shall review these interesting cases.

It is well known that a person may be convicted of the crime of arson upon presentation of the proper kind of circumstantial evidence. However, a conviction on this basis is illegal, unless the testimony proves "beyond a reasonable doubt" that the accused is guilty. Otherwise the higher court will reverse the lower court's conviction.

Definite Evidence Required

For illustration, in Shephard v. Commonwealth, 158 S.W. 2d 643, reported February, 1942, it was shown that a barn owned by John Hughes burned about 11 o'clock on the night of March 17, 1940. On that day John Hughes had attended a trial in the Magistrates' court. Apparently, John's son had accused Will Shephard of stealing his dog, and the trial was in connection with this matter.

John Hughes testified that on that day he overheard Shephard say that it would cost the former "several dollars more than this dog trial would be worth." Another witness testified that she heard Shephard's wife say "the old thing will not make nothing by this; he will only lose more than he makes." This conversation was directed towards John Hughes.

Shephard was arrested and convicted of burning the barn. However, during the trial there was no evidence *as to any circumstances or conditions* in the immediate neighborhood of the barn indicating that the fire was of incendiary origin. And the only evidence given, in addition to the above facts, which tended to prove that Shephard burned the barn was that Daniel Hughes, a relative of John's, testified that he saw two men and two women going in the general direction of the barn that night, and that he thought one of the men was Shephard. In view of these facts the higher courts reversed the lower court's conviction, and said: "The foregoing testimony is all that even tends to point the finger of suspicion at appellant (Shephard) and in our opinion it was clearly insufficient to justify his conviction. While it is true that a conviction may be had on circumstantial evidence alone, such evidence must reasonably impart guilt and must be so unequivocal and incriminating as to exclude every reasonable hypothesis of innocence. The evidence in this case was far from measuring up to this standard."

Testimony Must Be Convincing

Another important point of law is that it is useless, in a prosecution for the crime of arson, to "imply" guilt without the introduction of proper and convincing testimony supporting the implication "beyond a reasonable doubt." See the case of People v. Nicolia, 39 N.E. 2d 929, reported March, 1942.

The facts of this case are that a person named Nicolia was convicted in the Niagara County Court, New York, of the crime of arson in the second degree. The conviction, in addition to other testimony, was based upon the evidence that Nicolia's uncle carried heavy insurance policies on the house which was burned. Thus it was implied that Nicolia had burned the house to enable his uncle to collect the insurance. However, it was not contended by the prosecution that the uncle was an accomplice to the crime. Therefore, the higher courts reversed the lower courts decision, and said: "It was error to admit evidence of insurance policies owned by the defendant's uncle covering both the house which was the subject of the fire, when there was no claim that there was any complicity on the uncle's part in the crime charged against the defendant (Nicolia)."

Motive of Crime Important

Therefore, it is quite apparent that before a higher court will uphold a conviction of arson, based upon circumstantial evidence, it must be shown that the testimony "ties up" or "connects" the crime with the alleged *reason* for its commission. In other words, the fact that the testimony proves that the accused "may" have had good reason to commit the crime is not sufficient to justify the conviction.

For illustration, in Barefield v. State 5 So. 2n 113, reported July, a conviction of the crime of arson was based upon a chain of suspicious circumstances which did not bring the accused to the scene of the crime. Actually, the two persons were convicted of burning a church. No testimony or evidence was introduced proving that they had set fire to the church, but it was shown that the minister and others had objected to the two men selling beer nearby. Also, it was proven that the two men had expressed open antagonism, and opposition, or animus, against the church program. The higher courts reversed the conviction, and said: "The result was to inject into the case a foreign and irrelevant issue with which the defendants were shown to be cognizant of or concerned with, viz: the very worthy and genuine purpose of the church to prevent the establishment of bree selling in the community. And from that spring-board of proof, the jury was expected and authorized to jump to the conclusion that, because one of the defendants had indicated an intention to sell beer, their guilt here could be inferred on the basis of the irrelevant testimony elicted by the foregoing question. Such evidence, in the manner presented, had no place in the case, was entirely irrelevant to any proper issue in the case and should not have been allowed."

Obviously, if the testimony had been given to the effect that the accused had threatened to burn the church, or that they had boasted that they had burned it, a sufficient connection between the crime and its reason would have been established to justify the jury's conclusion that the accused were guilty.

The higher court held that the mere fact that the accused may have, or actually had a good reason to commit the crime, without other

relevant testimony, was not sufficient to justify a conviction of the crime of arson.

Useless Trial

Frequently, an accused is induced to sign a confession. It is important to know that it is useless to arrest and convict an accused of the crime of arson unless the law is strictly followed particularly with respect to warning the accused that all statements in a confession may be used against him. This requirement is present in all states' statutes. And, again the true owner or owners of the burned building must be properly listed in the indictment, otherwise the higher court will reverse the lower court's conviction.

For instance, in Kindle v. State, 159 S.W. 2d 507, reported in April, 1942, a person named Kindle was convicted of the willful burning of the Liberty School house in Falls County, Texas, and by the jury was given a sentence of two years in the penitentiary. The conviction was based upon a confession which he had signed.

He appealed to the higher courts and alleged that no warning was given him relative to the fact that he did not have to make any statement at all, and that any statement he did make could be used against him. It is interesting to observe that the lower court's conviction was reversed by the higher court. The higher court said: "True it is, the assistant district attorney, who took such statement, testified that he did thus warn appellant (Kindle), but such was denied by him."

Also, this court held that the conviction was illegal because in the prosecution for willfully burning the school house the ownership was alleged in three trustees, as trustees of the school district and it was shown one named trustee had resigned previous to the fire. In this respect, the court said: "If the ownership is laid in two or more persons jointly and the proof shows that one or more persons named as joint owners had no interest in the property, the variance is fatal, and the court should direct an acquittal."

Testimony Supports Confession

It is true that a conviction of arson based exclusively upon a mere signed confession often will be reversed by the higher courts. On the other hand, if other testimony, given by disinterested witnesses, verifies statements included in the written confession then, under these circumstances, the higher courts conviction will be upheld.

For instance, in Banks v. State, 157 S.W. 2d 360, reported January, 1942, the court records prove that a man named Banks signed a written confession in which he admitted his connection with the burning of the building for $125 promised to be paid him by a man named Foster. It further appears from his confession that he put five gallons of gasoline in a can, placed it in the back part of the building, and ignited it, after which he ran.

During the trial the fire chief testified that when he arrived at the building it was in flames; that the windows and doors were blown out, which indicated that there had been an explosion on the inside, which blew the door and window frames out in the street; that he remained at the building until after the fire was extinguished and the walls sufficiently cooled for him to enter it. He found therein approximately 150 cans of lubricating oil stocked on the floor which heat had caused to explode and oil was running all over the floor. He also found two five-gallon cans which carried the odor of gasoline but which were empty at the time. The accused was convicted.

Therefore it is quite apparent that when attempting a conviction supported by a signed confession, other and important relevant testimony should be held in reserve for subsequent use during the trial. Under these circumstances the accused may be convicted although he may repudiate the confession.

Convicting Testimony

Obviously, it is advisable, when deciding to prosecute a person for arson, to accumulate testimony that will be legal and proper for immediate and positive conviction. When convincing and connecting testimony is introduced, the jury may hold the accused guilty without necessity of introducing, as additional evidence, a confession. Under these circumstances the higher court will uphold the decision rendered by the jury, because it was based upon sound and justifiable conclusions. In order to accomplish this result there must be proof of circumstances from which the jury will be justified in deciding that the fire was of incendiary origin and, further, that the accused actually started the fire.

In determining whether or not there is sufficient evidence to support the verdict of guilt, the jury is within its rights when it accepts as true all evidence that tends or adds to the establishment of guilt of the accused. Moreover, inferences reasonably may be derived from the presented testi-

Shavings Warehouse Makes Hot Fire

A building that was used to store wood shavings at the plant of the Gas Purifying Materials Company in Astoria, Queens County, N. Y., was destroyed by fire recently. The two alarms that were turned in brought fifteen pieces of land apparatus, a fireboat, a fire rescue squad and a police emergency squad.

mony, and the jury may base its conclusion upon all of the relevant matters.

For illustration, in the leading case of State v. Berk, 29 S.W. (2d) 150, testimony was presented the jury, as follows: A proprietor of a store had his business on the first floor and he lived on the second floor. He had issued to himself an insurance policy covering both the stock of merchandise and his household furniture for the sum of $1,000. Four weeks later another policy was taken out for $2,000. And four weeks afterward the building burned. The proprietor was accused of starting the fire. He flatly denied guilt and refused to sign a confession. However, during the trial these important facts were presented as testimony: Two policemen were walking on the street when they heard an explosion. Before they could turn to look, the fire was shooting from the downstairs windows in the building. The fire department answered the alarm and immediately extinguished the fire. The fire chief found two five gallon cans partly filled with gasoline. Also, he saw plenty of evidence that the fire had been started because the part of gasoline removed from the can had been poured around onto the floor. And, neighborhood witnesses testified that during the morning of the day the fire had occurred the proprietor had hauled from the store a considerable quantity of merchandise. In view of this testimony the jury held the proprietor guilty, and the higher court promptly upheld the verdict. This court said:

"There is evidence which the jury had the right to believe tending to show that the proprietor was secretly removing a portion of his stock from the store on the day the fire occurred and shortly before the fire. This fact, in connection with the recent insuring of his property for $3,000 tended to show a motive for him to burn his property in order to collect the insurance. . . . The fire started in the premises occupied and entirely controlled by the proprietor. It was under full headway when discovery was accomplished. The odor of gasoline was then plainly noticeable and gasoline was found conveniently placed on the second floor, although it fortunately had not ignited."

Thus, in this case the testimony included evidence of these six facts, namely, recent insurance; removal of merchandise prior to occurrence of the fire, full control over the burned premises by the accused; presence of gasoline within the building; and testimony that an explosion occurred when the fire started.

What Is Arson?

In order to be certain of a conviction of a person accused of this term, the exact legal definitions of arson must be known.

Woodworkers Make Fires Difficult to Control

"Woodworkers" plants fabricating articles from wood, make hot, fast travelling fires. Typical of this type of fire was that which swept a two-story building occupied by the Chicago Mill and Lumber Co. and the Container Corpn. of America, Chicago, Ill., some time ago. Three firemen were killed and four injured in the blaze.

Another important point of the established law is that a person who is accused of committing the crime of arson may not be guilty from a legal view-point of this particular crime, although he was performing an illegal act when he started a fire. In other words, in order for a person to be guilty of committing the crime of arson it must be proved beyond a reasonable doubt that he "purposely and maliciously" set fire to a building.

For illustration, the leading case of Jones v. Commonwealth, 38 S.W. 2d 971, it was disclosed that a dwelling caught fire and burned.

A person named Jones was arrested and accused of committing the crime of arson. Jones admitted that he burned the building, but contended that it was done accidentally. He testified that he was unlawfully searching for whisky in the house, and when he lighted a match it accidentally caught fire to some inflammable merchandise, resulting in destruction of the building.

The jury rendered a verdict holding Jones guilty of committing the crime of arson. However, he appealed to the higher court and notwithstanding his admission it is interesting to observe that this court held Jones not guilty of arson, saying:

"We are of the opinion that appellant (Jones) under the facts of this case was entitled to an instruction on 'accidental burning' . . . The fact of appellant's illegal searching for the whisky may lead the ordinary layman to a confusion of ideas as to the words 'unlawful, willful and malicious' . . . and hence we have reached the conclusion that, under the facts of this case, appellant should have the instruction of accidental burning which he claims."

Distinction Between Testimony

An interesting feature of the well established law is that an *ordinary or common* witness will *not* be permitted by the Court to testify as to his *conclusion or belief* of who may have set fire to a building or to the cause of the conflagration. This is true because it is the duty of a jury to determine these facts after giving due consideration to all testimony given by ordinary witnesses.

On the other hand, an expert witness may testify as to his belief or conclusion and give his opinion whether a fire was incendiary origin. This is so because an expert witness is recognized by the law as being sufficiently efficient and experienced in his profession, to which testimony

(*Continued on page* 474)

Deferment of Firemen

Experiences of the Majority of Departments in Requesting Deferment for Skilled Men Found to be Unsatisfactory

IN the May issue of FIRE ENGINEERING were given the experiences of a group of Fire Chiefs in securing draft deferment for qualified men in their departments. In the June issue were included the reports of fire departments which were not so successful before their draft boards. Additional reviews of this latter group follow.

Waterloo, Ia.
Ray Tiller, Chief

We have not been able to secure deferments for firemen called in the draft.

I only had one man who was not married. He was drafted last October. At that time, I made an affidavit which he filed with his original draft papers. When he was called, I consulted the office of the local draft board and filed an appeal with the Appeal Board. The Appeal Board met and refused the appeal and the man was called to the service on October 19, 1941.

At the present time, I have several young men who are married, most of them having children. I have been advised by the secretary of one of our local draft boards that these men will be called, and that there is nothing that the local draft board or the local appeal board can do, for the reason that the draft officials in Washington have not issued specific orders authorizing the deferment of city firemen. In no case can the local draft board or local appeal board defer anyone for more than six months, and they can only have one deferment of six months.

If the above is true, I believe that some action should be taken at Washington authorizing the local draft or appeal boards to issue deferments to firemen, if they so desire.

Wilkes-Barre, Penna.
Ambrose Saricks, Chief

We have lost two members of our department through the draft, but neither the department nor the firemen involved have asked for deferment.

Oklahoma City, Okla.
G. R. McAlpine, Chief

No men from this job have been deferred. Twenty men have either joined the armed forces or have been drafted.

A meeting was recently called in which the draft officials agreed to give the deferment of an individual favorable consideration should the City Manager request it.

New Haven, Conn.
Paul P. Heinz, Chief

We have not as yet requested deferment for any of the firemen called in the draft. Two men have already been called.

Meriden, Conn.
John F. Moroney, Chief

Our Assistant Fire Chief was given a deferment by the local draft board. The action caused such a storm of protest that he decided to enlist.

This man was selected by the Army to attend a school on methods of fighting incendiary bombs. He has also been in charge of training the auxiliary firemen.

The Mayor has asked for a blanket deferment of all police and firemen, but it is not likely that this will be granted because of public opinion.

Savannah, Ga.
Walter S. Blanton, Chief

We have had six men drafted from our department. We took the matter of deferment up with the local draft and are awaiting their action.

Lowell, Mass.
Charles F. Stackpole, Chief

In January of this year several of my men were called before their draft boards for induction, and realizing that if most of the young men were taken into the Army, the department would be seriously handicapped in the event of an incendiary raid or fires due to sabotage, I wrote to the various draft boards, asking that if it were possible they be deferred until such time as their services were urgently needed by the armed forces. I also filled out the necessary forms which were furnished by the draft boards, had them notarized, and sent them to the draft boards in question. The chairman of one board agreed that my request was reasonable and deferred the man under their jurisdiction for two weeks. This chairman also stated that when the deferment was granted it would be appealed by the Appeal Agent to the Appeal Board of the State, and that the deferment would be continued pending the decision of the State Appeal Board.

The letter I received from the chairman of the draft board regarding the appeal is as follows:

"Kindly be advised that the case of John Jones, a member of your department, was classified in II-A by the local board, which classification was appealed by our Appeal Agent and forded to the Appeal Board and was returned to this office on February 11, 1942.

"We regret to inform you that the Appeal Board has upheld the appeal of their agent and reclassified this man in Class I-A."

This has been my experience in every case, and it seems as if nothing can be done about it.

Great Falls, Mont.
Charles E. Lane, Assistant Chief

We have not been able to secure deferment for firemen called in the draft. One man was called. We communicated with the local draft board and was told that there was no deferment for firemen. An appeal was taken to the State Board with no results.

Fort Worth, Tex.
C. C. Killian, Chief

Eight of our men have called and none deferred. More are to be called shortly.

We have requested the local boards in writing to defer these men, stating that there was urgent need of them in the fire department. We have had no success whatsoever.

Kenosha, Wis.
William J. Brady, Chief

Two of our men have been drafted into the army. We are now getting cooperation from the Police and Fire Commission which has appealed to the local board. The board has promised to act on each case individually.

Charleston, S. C.
G. W. Stout, Chief

Two of our men have been called into service. Neither of them have been deferred.

I wrote a letter to the local board giving the number of years required to train a fireman and the necessity of keeping all present men.

We did submit an appeal without results.

Camden, N. J.
John R. Lennox, Chief

Eight of our men have been called into the service. An appeal was made to the local draft board by letter by the Director of Public Safety and myself. There were no results. This city has $800,000,000 worth of defense work.

Haverhill, Mass.
Benjamin L. Chase, Chief

I wrote a letter to the draft board and we received a deferment for one fireman. He finally found that he would have to go and so joined the Navy.

I have at the present time one lieutenant and two firemen in the service. It seems to me that these men might be more valuable to the country as a whole if they were deferred and allowed to remain as firemen.

Danville, Va.
John C. Long, Chief

Three of our men have been called, but none deferred. I appealed to the local draft board.

I had one fireman drafted and sent back because he was over twenty-eight years of age. He was called back into service on January 17. I took it up with the Third Corps Area in Baltimore and they gave him a six month defer-

ment. I got action on this man in thirty-six hours.

Minneapolis, Minn.
Earl Traeger, Chief

We filled out form requesting deferment of our firemen called in the draft, but our appeal was denied. We did not appeal further.

Scranton, Penna.
Edmund B. Lewis, Chief

The only two requests made for deferment are still pending. None of our men have been called into service as yet. Two members of the department have enlisted.

If the local board fails to grant the two pending deferments, I will then submit an appeal.

Jacksonville, Fla.
W. Q. Dowling, Chief

Thirteen of our men have been called and none deferred. We took the matter up with the local draft boards without results. We did not appeal.

Atlanta, Ga.
C. C. Stryon, Chief

About twenty of our trained members have been called and only one member given a temporary deferment of six months.

We wrote the Senators and Congressmen from Georgia requesting information on the correct procedure to follow in securing deferment, but were informed that it was entirely with the local boards. Affidavits and letters asking for deferment were written, but none were accepted.

Jackson, Miss.
L. F. McDonald, Chief

Only one of my men has been drafted. Several have enlisted to keep from being drafted. I filed the necessary forms for deferment with the local draft board. This method was not effective.

Madison, Wis.
Richard Widmann, Chief

Six men have been called and none deferred.

At the time of the draft, the Police and Fire Commission felt they did not want to ask for deferment, and to date have not done so, although I asked that all men with one year or more service in the department be deferred at that time.

My personal feeling is that all firemen who have one year or more service should be deferred.

Springfield, Ohio
Grover L. Frock, Chief

The City Manager would not permit our asking for deferment of firemen. One of our members has been drafted and two have enlisted.

I believe that any city firemen with service of three years or over should be deferred.

Quincy, Mass.
William J. Sands, Chief

It has not been necessary to date to ask deferment for firemen. Some of the recently appointed men are to be drafted, but we did not request deferment for them.

To date all the members within the draft limits have had dependents and hence have been placed in 3-A. Three of the newly appointed members have been placed in 1-A, but since they did not request any deferment and since at the time I did not believe it necessary, I have taken no action to secure deferment.

Kansas City, Kans.
Olander Lind, Chief

Up to the present time, I have had only one man called in the draft, and as he was just a new man working under a temporary appointment, I did not make any effort to secure deferment for him.

Council Bluffs, Ia.
Waldo Merrill, Chief

None of our men have been called as yet. At this time I have not encouraged men to ask for deferments. I will appear before the draft board when my key men are to be called.

Chicago, Ill.
M. J. Corrigan, Commissioner

It is the policy of the Chicago Fire and Police Department not to ask for draft deferments of members of the departments because of their occupations. We feel that these men, like all others, should answer the call of service to their country. We are sure we can train all replacements to the end that the fire service will not be impaired by men entering the armed forces of our country.

To date, fifty-five members of the Chicago Fire Department have entered the Army or the Navy.

Altoona, Penna.
Paul L. Amheiser, Chief

We have never asked for deferment of any of our firemen. Two men so far have been called. One has been taken.

Instead of asking for deferment, the men in the department have been pestering this office for a leave of absence to go into the Army or into some kind of defense work to aid their country.

The city is talking about increasing the age limit in the department, so that there will be older men to take the place of the men that may be called out of the department for war service.

Trenton, N. J.
Thomas J. Phelan, Chief

We have not asked for deferment of any of our firemen, but have recommended to the Commissioner that if the fire department suffers any serious depletion either through the draft or enlistments, we should request deferment.

Pittsburgh, Penna.
Edward J. Kerr, Chief

We have not requested deferment. Fourteen firemen have been called, but none have been deferred.

Nashville, Tenn.
J. A. Scruggs, Chief

The City of Nashville up to now has not taken any definite action relative to asking deferment for drafted men. We have had only one man drafted and two have enlisted voluntarily.

Pueblo, Colo.
Luther P. Willis, Chief

Our Commissioner decided some time ago not to ask for deferment of any city employee. At the present we have not lost a firemen, but expect to soon.

Clinton, Ia.
Albert Krenz, Chief

We have not tried to have any men deferred. We have two men who are eligible for the draft, but have been deferred for six months without any help from the department.

New Albany, Ind.
George W. Hanen, Chief

We have no men in the draft yet,

Today, Farm Losses Are National Losses

Each time a farm establishment burns, there is a loss in national food production capacity. This represents a real loss where a dairy farm is involved. The fire illustrated destroyed dairy farm buildings at Lake Montrose, Pa.

but may have if their classifications are changed.

I tried to get something done. I contacted the Mayor and City Attorney and they have promised to take some steps to help.

Macon, Ga.
J. E. Dellinger, Chief

We have not had any men called yet, but will have soon. I called on the draft board members who stated that the Army needed trained men as well as the fire department.

Michigan City, Ind.
Henry P. Scholl, Chief

So far none of our men have been called for the draft.

I have not followed any procedure, but I believe they can be classed as "an essential man in governmental service pertaining to the protection of life, property and safety" which calls for deferment under regulations of the local draft boards. I have seen a copy of the regulations and I believe I would base a deferment on them.

Bay City, Mich.
H. C. Crumb, Chief

Bay City has not had any men called for the draft as yet, but we expect it any day.

I have taken the matter up with our City Manager, feeling that no man who is a regularly appointed fireman and who has passed his probationary period, should be taken from us at this time when the Government is asking us to enroll auxiliary firemen by the hundreds.

Waco, Tex.
J. R. Meers, Chief

We haven't had any men called for the draft, but have asked for deferment. We have written each draft board in the city asking for deferment of trained firemen, as we believe the type of fire we must fight today requires trained men. We have not received an answer to the request made.

Spokane, Wash.
William P. Payne, Chief

None of our men have been called for the draft as yet. We attached a letter to their question requesting deferment for all firemen who may come before the board.

In our letter we explain that the men themselves are valuable as it takes years of experience to train these men to handle their job. We also stated the nearness of the fire department to civilian defense and the service they render in case of air raid.

As yet we have not had occasion to make an appeal, but in the event that one of our men is drafted, and the local board does not defer him, I will appeal to the highest board.

Wichita Falls, Tex.
J. L. McClure, Chief

No men have been drafted out of our department. There have been six men who resigned from our department and entered the fire department service at Shephard Field, because of a slight increase in pay and better working conditions. These men were not drafted. These camps should not offer inducements to city firemen to leave their departments. They are able in this way to secure the best men from the cities.

My personal version of this situation would be to leave or place the whole responsibility on the Chief and the draft board. As we well know there are some firemen who should be in the Army. The best men will not ask for deferment.

Ann Arbor, Mich.
Ben J. Zahn, Chief

Up to the present time all our members have been placed in 3-A. In the past few years we have given married men with families preference over single men, providing all other qualifications are equal. The result is that we have had no men called in the past draft.

Deferment will be asked for any members that have taken a real interest in their work. There are several in this latter draft that are married, but have no children.

Eau Claire, Wis.
Lawrence E. Smith, Chief

To date, I have not had to ask for deferment, but like the rest I can expect to meet it. I am not worrying about it.

I shall not ask for deferment for the men. They know what they want to do. If they want to ask for deferment, that is all right too.

New Rochelle, N. Y.
Oscar A. Grab, Chief

At a meeting with the draft board some time ago, due to the fact that this bureau would have possibly only two men called, it was decided to defer the draft question until such time as the men were called.

Hackensack, N. J.
Frank P. Walsh, Chief

We have not had to ask for deferment of any member because all the men subject to the draft are in Class 3-A.

Revere, Mass.
Thomas J. McCarrick, Chief

It is our understanding that deferments will not be granted. To date men of military age who have been examined have been placed in Class 3-A.

I have not requested deferments. Until those in charge of the Selective Service System decide that firemen are necessary men, it will be difficult to procure occupational deferments.

Troy, N. Y.
Cornelius A. Casey, Chief

We have had one member enlist in the Navy. There are about twelve others who will be subject to the draft. As yet we have not asked for deferment.

Salem, Mass.
Arthur L. Flynn, Chief

None of our men have been called in the draft, but we expect a call very soon. We have written letters to the draft boards, but they tell us they will consider only individual cases.

Racine, Wis.
Thomas R. Hartnett, Chief

We have only one man called. He was with us only three months and expected to be called at the time he joined the fire department.

Kokomo, Ind.
Robert Hoover, Chief

None of our men have been called as yet. I spoke to the board about one or two men and they reacted very favorably.

Pasadena, Calif.
E. F. Coop, Chief

Up to recently we did not deem it advisable or justifiable to ask for deferment.

The situation at present, however, is becoming critical as 31.5 per cent of our total personnel have had three years or less of fire fighting experience. This condition is not entirely due to draft, but due to better salaries in defense industries, and retirements.

We feel that some kind of solution must be arrived at soon as our charter prohibits employment of men over thirty years of age, and that is the most likely age for men to be drafted.

Our draft boards are sympathetic and cooperative and wish to do all in their power to assist the situation in which we find ourselves.

Binghamton, N. Y.
Arthur J. Dillon, Chief

To date we have one fireman in the military service. Members of the department submitted their own affidavits. No appeals have been submitted.

Tulsa, Okla.
C. C. Jennings, Chief

To date we have not asked for any deferments. About six of our members have enlisted.

It looks though something will have to be done if any degree of efficiency is retained.

Des Moines, Ia.
Charles L. Slade, Chief

We have asked for no deferments. The men themselves have not requested any. I have lost no men that cannot be replaced.

Fort Wayne, Ind.
Carter Bowser, Chief

We have not tried to secure permanent deferment for any of the men called in the draft. I requested the draft board to defer the three men called until they had their affairs in shape to leave.

Dallas, Tex.
L. M. Funk, Chief

We have not been able to secure the deferment of any of our men called in the draft. We appealed to the State Board, but without results.

Lima, Ohio
H. L. Taflinger, Chief

We have several men registered for the draft. As yet none have been called. Therefore we have had no cause to ask for deferment.

FIRE EQUIPMENT MODELS COVER 2000 YEARS OF FIRE SERVICE

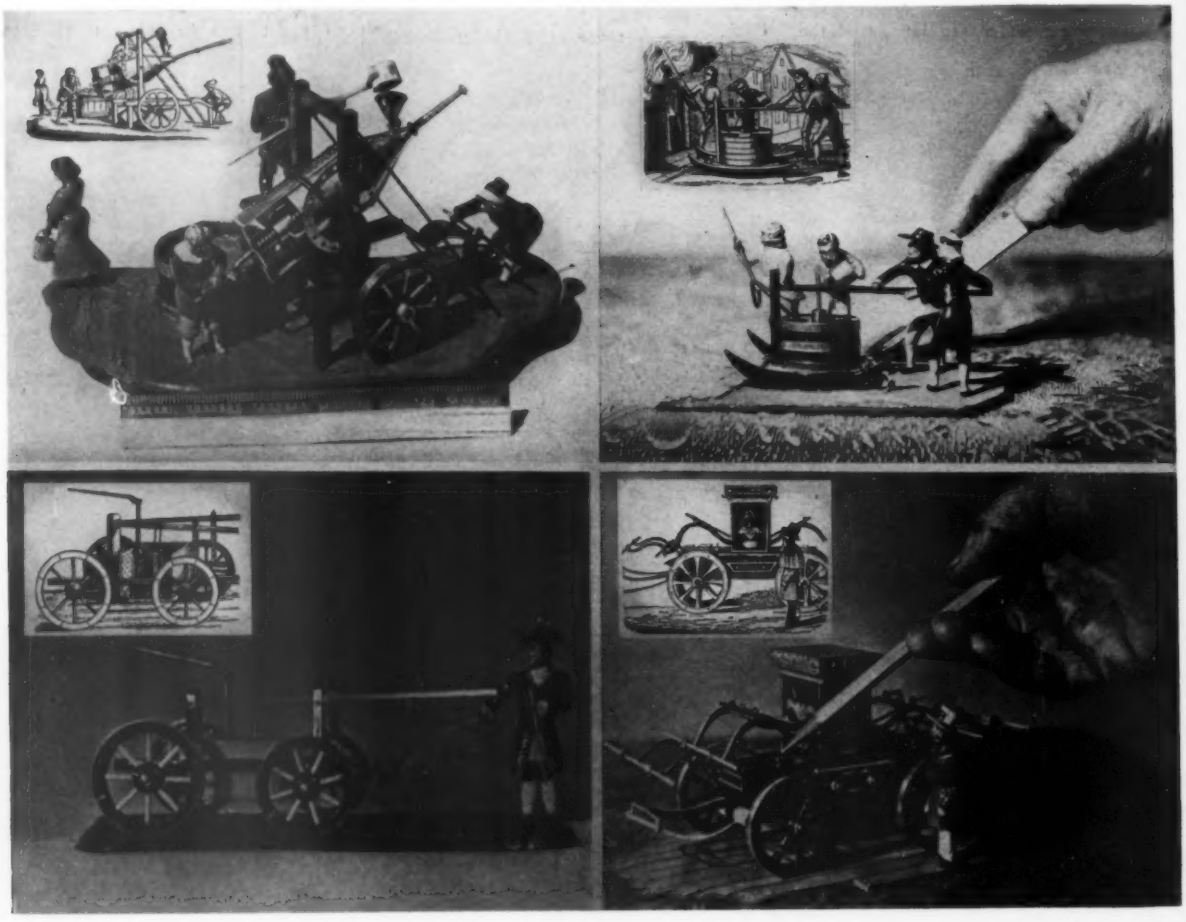
Early Fire Fighting Units Accurately Reproduced in Miniature

ONE of the most interesting fire department hobbies is that of Mr. George R. Boyd of the Oakland, Calif., Fire Department. As a pastime, Mr. Boyd copied the pictures that appeared in FIRE ENGINEERING during the winter of 1928 and 1929 in connection with a series of articles entitled "History and Evolution of Fire Fighting." He started his work three years ago.

At first the models were a little crude, but since that time Mr. Boyd has become very proficient as can be seen by the pictures which accompany this article.

The models are completely made by hand out of wood, metal, fibre, bits of stone, etc. Many of the parts had to be finished under a magnifying glass as they are so small. The wheels are fabricated and built up piece by piece as are all other parts.

The little figures are carved with a pocket knife out of solid pieces of white cedar and are all about two and a half inches tall, two and a half inches representing a six-foot man. The scale of the models was determined by proportioning them to the size of the little men, keeping the men all the same approximate size. These little figures occupy the same position as in the original cuts and in many instances even slightly resemble the originals. They are all painted in appropriate colors and are dressed according to history. In two instances, where no figures accompanied the equipment, an appropriate man was added in order to lend animation and interest to the scene. Nothing has been added or altered about the models themselves except, of course, where han-



Photos by George L. Webb

Some of Mr. Boyd's Models

Upper Left: Syringe engine from Besson, 1568. This giant syringe, used in Europe in 1560, was known as a "Giant Squirt." Water was dipped out of the tub with the long handled dipper and poured into the funnel. The funnel valve was then closed and the man at the crank turned the screw forward, causing a plunger to force the water out of the nozzle. The process was repeated in spurts.

Upper Right: Earliest German fire engine, that of Hautsch, Nuremberg, 1656. This little "tub on runners" was common during the 1600's. Of German invention, it was used throughout Europe. During the "Great London Fire" of 1666, this type of fire engine was the last word. To be effective, the sled was placed as near to the fire as possible. It was filled by buckets and its single plunger spurted water about equal to that of a modern garden hose. Naturally, if the wind shifted, the firemen would have to abandon their little engine and run for their lives.

Lower Left: Engine belonging to City of Strasbourg, France, in 18th Century. This 18th Century engine is an improvement over the earlier single cylinder "tub on runners" being a two-cylinder "tub on wheels." It was necessary to keep in unison in pumping the handles as each is separately operated, a very difficult task.

Lower Right: Early fire engine built in Philadelphia. "Big Philadelphia" engines of 1800 were manned by thirty to forty volunteers and could force a stream of water 120 feet into the air, being the most powerful hand pumpers ever built. Some of the crew stood on the ground, while others stood on folding platforms above. Men literally swarmed all over the engine.

dles, etc., were not complete in the cuts, these have been extended or completed.

Mr. Boyd has completed his ninth model since these pictures were taken and has a tenth under construction. His ninth model accounts for the Middle

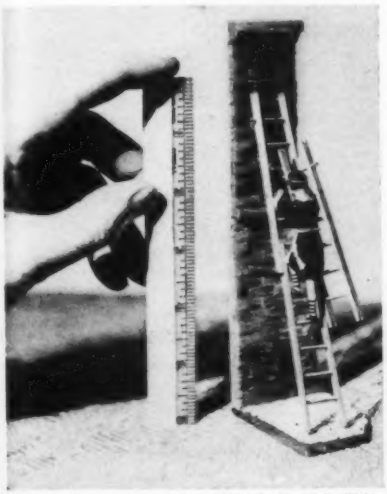


Photo by George L. Webb

Rome, 400 A.D.

Until the fall of Ancient Rome, about 440 A.D., firemen of that city used the famous Roman extension ladder, a type still widely used in Europe and by steeplejacks in America today. The sections fit together with notches in the ends lapping over the end rungs. The little Roman picture here is climbing up the two-section ladder to place a third section which will then extend over the edge of the roof of this particular building.

Ages, a period of about a thousand years when buckets were the only fire fighting devices available, and only infidels dared to use them. No appropriate pictures are available to show this step in history, but there is written evidence that such a deplorable state existed. The model is explained as such and is his own conception coupled with facts from medieval pictures. It shows two peasants attempting to extinguish their blazing hut with water buckets.

The tenth model, on which Mr. Boyd is now working, is that of a Newsham type engine, old Hayseed No. 1, of New York City, one of the two first brought to America and put into service. It is an action scene and shows seven little wooden men in position around the old Newsham tub.

The entire set will be housed in a small glass case about six inches by eight inches by thirty-five inches. The case is lighted with small radio bulbs and is ornately fitted in brass. Mr. Boyd estimates that well over 2,000 hours have been spent on the work alone.

In brief, these ten models cover outstanding hand-devices of every age from 200 B. C. to 1850, when steamers were beginning to appear.

Mr. Boyd's models are not toys; they are authentic miniatures representing the outstanding developments in the fire fighting field over a period of 2,000 years.

The following pictures show some of Mr. Boyd's models. In four of them, the cuts appearing in FIRE ENGINEERING from which the models were made are also shown.

FIRE HOSE FOR DEFENSE EMPLOYS LESS RUBBER

Rubber Shortage Necessitates Reduction from 17 to 7 Pounds per Hundred Feet

By B. P. Caldwell, Jr.*

FIRE chiefs and others interested in maintaining an adequate supply of fire hose for any emergency were considerably perturbed when the War Production Board order, released earlier this year, cut the amount of new rubber which could be used in hose from about 17 to a maximum of 7 pounds per hundred feet in the 2½-inch size, and correspondingly in other sizes.

This order had the immediate effect of making it impossible for manufacturers to supply hose meeting the standard of Underwriters' Laboratories and the specifications under which thousands of cities have been ordering.

Orders for new hose placed by cities and industrials about the time of the WPB restriction, came back with the word that the hose could not be supplied to meet existing requirements. This resulted in a deluge of inquiries to Underwriters' Laboratories from fire chiefs, purchasing agents, and insurance inspection bureaus asking, in effect: "What shall we do? What kind of hose can we get?"

To help remedy this situation Underwriters' Laboratories, after considerable experimentation and research developed an emergency alternate specification for fire hose.

Manufacturers are now supplying hose built to the new specifications.

Hose complying with this new, emergency alternate specification, inspected at the factory and bearing the Laboratories' label as evidence of conformance with the requirements, is the most satisfactory fire hose it is possible to produce commercially today for other than War Department use.

The main difference between the new and the old hose is that the new hose will probably not last as long. Otherwise the performance characteristics remain much the same. Burst pressures for the new hose in 1½-in., 2½-in., 3-in. and 3½-in. sizes, double jacketed, remain 600 pounds per square inch.

Fire hose specifications usually include a life test on the rubber lining of the hose. Such a test is included in the EA (emergency alternate) specifications, requiring that after 96 hours in a dry heat oven at 158° ± 2°F the tensile strength of the rubber lining samples shall be not less than 75% of the tensile strength of samples which have not been subjected to this heating.

While this test develops some useful information, unless supplemented by additional tests, it is not considered as being at all conclusive that a proper rubber compound is being used for the hose lining. And as experience shows that inferior samples can pass this test, an oxygen bomb aging test is also included in the Laboratories' EA specifications.

In the oxygen bomb test, samples of the rubber lining are subjected to the action of oxygen at 300 pounds per square inch pressure and at 70° C for 96 hours. After this test the tensile strength and the amount a sample will

*Assistant Secretary, Underwriters' Laboratories, Chicago, Ill.

Photo by George L. Webb

George Boyd at His Work Bench

To the right can be seen some of the completed models and the case in which they are kept.

stretch before breaking must be at least 60% of the tensile strength and stretch of samples not subjected to the oxygen bomb accelerated aging test.

Rubber technologists agree that the oxygen bomb test with its subsequent tensile and stretch requirements is considerably more severe than the oven test followed by a tensile test. It is therefore more suitable for definitely determining the aging qualities of rubber compounds.

In checking fire hose submitted to the Laboratories for labeling, the oxygen bomb test is conducted on samples obtained at the factory from each lot of 200 lengths of hose. At the average hose factory this means that samples are taken from approximately each batch of compound made up for hose linings.

The EA specifications also call for elongation, twist, and warp tests on both single and double jacketed hose. On single jacketed hose the tests are conducted at 300 pounds pressure and the elongation is limited to not more than 12%. On double jacketed hose the test pressure is 400 pounds and the elongation is limited to not more than 8%. These tests are conducted on each length of hose submitted to the Laboratories for labeling.

In each lot of 50 lengths a kink test is made on both the single and double jacketed types; and out of each 100 lengths a burst test is run. The requirements call for burst pressures of at least 600 pounds for double jacketed hose, and 450 pounds for the single jacketed.

Hose ordered by cities or industrials to these specifications will be marked: 1942 UL EMERGENCY ALTERNATE 1942, and: TESTED TO —— LB. (In this blank will be the proof test pressure of 300 pounds in the case of single jacketed hose and 400 pounds in the case of double jacketed hose). Each length of hose will also bear the label of Underwriters' Laboratories.

The EA specifications have been adopted in the interest of conserving rubber but at the same time to maintain the necessary performance of fire hose under these emergency conditions.

Junior Fire Department Formed in Ocean Grove

William Brennecke, a senior at the Neptune high school, Ocean Grove, N. J., was named Chief of the Ocean Grove Junior Fire Department, recently organized by the Ocean Grove Board of Fire Commissioners as an active auxiliary to the regular three-company department. The action was taken after the regular ranks of the department were depleted by the draft.

Twenty-one members of the junior department were sworn into service by Dr. William A. Robinson, president of the board, and were issued equipment. The juniors have been given drills in all phases of firemanship by a committee representing the senior department and have already responded to fires and air raid drills in the community. Edward Stratton is Assistant Chief and Willis Atkinson is Captain. Stratton is also Company President. Other officers are George Shibla, Vice President, William Romer, Secretary, and Gordon Macauley, Treasurer.

FRANK L. WILGUS

BURNING BOMBS EXTINGUISHED BY "DUNKING" IN PLAIN WATER*

Demonstrations by Fire Apparatus Manufacturer Give Interesting Results

DUNKING an incendiary is the surest and quickest method of killing it, C. B. White, head chemist for the American-LaFrance-Foamite Corporation, discovered in a series of experiments conducted recently.

These demonstrations may change incendiary bomb fighting.

Here is a brief of this new bomb-fighting method:

Wait about a minute before you approach a just-fallen incendiary—one out of every twenty German magnesium bombs contains a mild explosive which will go off within sixty seconds.

Then scoop up the burning mass on a shovel and place it in a metal wash boiler of water, deep enough completely to submerge it. The bomb will go "gulp!"—and expire, with scarcely a disturbance of the water's surface.

To cope intelligently with an incendiary bomb, one should know something of its composition. The standard German fire missile is a projectile fourteen inches long, including the metal "tail feather" which guides its downward fall.

The shell of the bomb is made of an alloy, high in magnesium—a substance which unlike most metals, will burn when exposed to persistent and intense heat. Once ignited in the open air it will burn until it has completely consumed itself, leaving only a cloud of smoke and some white ash.

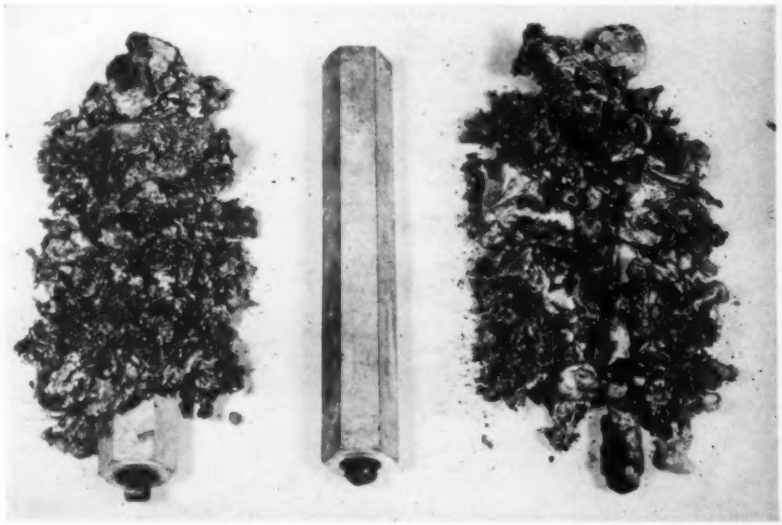
The magnesium alloy shell or case, is packed with thermite powder, a mixture of iron oxide and aluminum particles. At its base is a needle and percussion cap which when struck, ignites a flammable substance by which it is surrounded. Within sixty seconds, the thermite attains a temperature of about 4,500 degrees F.—a heat sufficient to melt the magnesium and set it on fire.

When small particles of burning magnesium, like filings and turnings are brought into contact with water, oxidation (burning) is speeded up so violently that the pieces fly about, spreading the fire. It was believed that the same thing would happen with a large chunk of magnesium.

But an incendiary bomb is a compact object, with comparatively little surface space exposed in relation to its volume. Therefore it sinks immediately in water, as the fire is engulfed.

The American-LaFrance Chemist began his experiments with a small magnesium container filled with thermite. He ignited it with an acetylene torch, watched it burn for a few minutes and then shoveled the melting metal into a fifteen gallon drum of water. One "glug!"—and it disappeared, the flame extinguished. No convulsive or scattering action resulted from the sudden contact of burning magnesium with water.

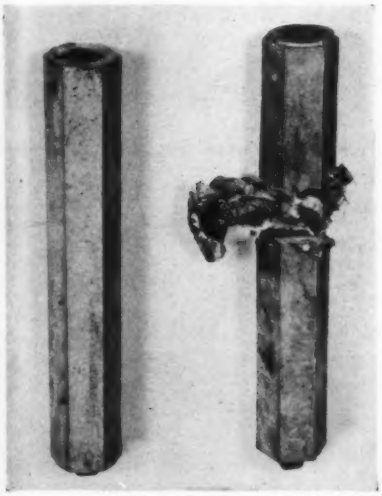
Still not satisfied that his experiment had been conclusive, Mr. Winter contacted the U. S. Government for more magnesium with which to continue. The Government obliged with several mag-



Center—Bomb Casing Before Being Ignited. Left—Result of Immersion of Burning Bomb in Water. This Burned Several Minutes Before Being "Dunked". Right—This Bomb Burned to Flowing Molten State Before Immersing. Residue About Two Handfuls of Hardened Metal

*Reprinted from "Blazes," published by American-LaFrance-Foamite Corp., Elmira, N. Y.

nesium bomb bodies of standard dimensions. Mr. White filled the shells with thermite, plugged the "tail" ends with iron plugs. Then he proceeded as before and with the same results.



Left—Magnesium Bomb Casing Before Burning. Right—What Was Found After Bomb Had Been Allowed to Burn About a Minute Before Dunking

He allowed the first bomb to burn for about a minute before lifting it by hand (he wore heavy gloves) into the water. It "gulped" and sank, cracking into three pieces. The second was permitted to burn for several minutes before its immersion; and the third burned into a lurid molten mass before being scooped on a shovel and dumped into the water. In each case the water did its job, immediately and harmlessly.

With the bomb itself disposed of one need only extinguish any fire which it may have started.

Water will take care of burning wood; chemicals are needed for oil fires.

Saginaw Fire Department Graduates Woman Auxiliary

With the "only auxiliary firewoman" in the State of Michigan in its ranks, the first class of auxiliary firemen trained by the Saginaw Fire Department was recently graduated.

The auxiliary firewoman is Miss Mary Elizabeth Hetherington, Saginaw High School journalism teacher, instructor of air raid precautions classes for Saginaw women and instigator of the series of meetings conducted recently in fifty-two churches in the city by which the fundamentals of air raid precautions for the home were outlined for hundreds of the city's housewives.

There are thirty-nine in the first auxiliary firemen class to be graduated. The group will be assigned to various fire companies throughout the city, standing by for duty on call in an emergency. Monthly meetings to keep the auxiliary groups together and to acquaint them with new developments in their part of the civilian defense program are being arranged.

W. P. B. ASKS BIDS FOR 2,258,000 STIRRUP PUMPS

Design Eliminates Use of Critical Materials, Rubber Hose Tabooed

THE War Production Board is asking bids for the manufacture of 2,258,000 stirrup pumps for civilian defense. Contracts are to be let this month.

Specifications are of interest because of the elimination of critical materials. Below are reproduced some of the more important features of the pumps as set forth in the specifications.

This pump is designed to be used for fire extinguishment in conjunction with a common water pail or any other type of suitable container. It shall consist of (1) a pump to discharge the liquid; (2) a hose to convey the liquid to the point of discharge; (3) a dual purpose nozzle to apply the liquid to the fire; (4) a suitable stirrup stand to hold the pump rigid and upright in a water container during pumping operations.

This pump shall be sturdily constructed to withstand the shocks and strains to which it will be subjected but of minimum weight; shall be sufficiently corrosion-resistant to permit lengthy storage and intermittant use without deterioration; shall be arranged and constructed so as to permit ease in operation and shall be of definite standard dimensions with proper clearances and fits.

Detailed Requirements

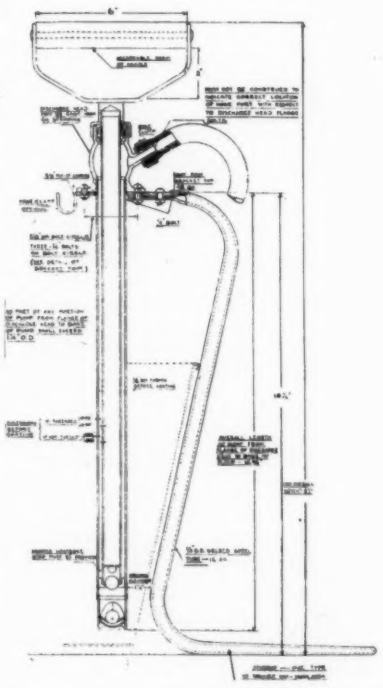
The pump shall be of the manually operated, single suction, double discharge type. Pump shall be so built that when being operated, pressure and capacity characteristics will be sufficient to develop a stream with horizontal range of at least thirty feet (30′) through the hose and nozzle required.

Pump discharge head shall be of ferrous metal casting or stamping of best quality, of satisfactory thickness for the service required and properly coated to prevent corrosion. Discharge port shall be of such outside diameter and properly notched so that standard three-eighths inch (⅜″) hose, fastened with a conventional type ferrous metal water hose clamp, will be well secured.

Inside diameter of the discharge port shall be sufficient for operation characteristics required but not less than one-quarter inch (¼″).

Pump cylinder shall be of seamless or welded steel tubing having an outside diameter of one and one-eighth inches (1⅛″) and wall thickness of forty-thousandths of an inch (0.040″), if tube is threaded, or of thirty-five thousandths of an inch (0.035″) if tube is not threaded. Tubing shall be adequately protected by porcelain enamel inside and out with the inside surface sufficiently smooth, uniform, and free from imperfections to assure the required pumping characteristics without undue wear or friction.

Suction valve assembly shall be constructed of plastics or other non-metallic material having like characteristics which will efficiently replace brass, and shall be tightly secured in the bottom of the pump cylinder. Assembly shall be designed to permit the passage of an adequate amount of liquid so that the pumping characteristics required may be produced and proper operation of valve under all conditions may be assured. A glass ball type valve of the best quality and of the proper size and design to permit satisfactory operation, shall be used; and seat shall be of non-metallic material having such characteristics that it will efficiently replace brass, to assure proper seating with a minimum of leakage.



Cross-section View of W. P. B. Stirrup Pump

Strainer shall be of plastic or other non-metallic material having like characteristics which will efficiently replace brass securely fastened to the bottom of the intake valve assembly. Maximum openings in the strainer shall not be greater than three thirty-seconds of an inch (3/32″) in diameter but the total open area presented shall be at least twenty times the area of the discharge nozzle.

Plunger tube shall be of seamless or welded steel tubing having a wall thickness of forty-thousandths of an inch (0.040″), if tube is threaded, or of thirty-five thousandths of an inch (0.035″) if

not threaded, and of a diameter which will permit the discharge of approximately the same amount of liquid on the upstroke as on the downstroke. Tubing shall be adequately protected by porcelain enamel inside and out with the outside surface sufficiently smooth, uniform, and free from imperfections to secure proper pump operation without undue wear or friction.

Discharge valve assembly shall be of plastic or other non-metallic material having like characteristics which will efficiently replace brass. A glass ball-type valve of best quality and of proper size and design to permit satisfactory operation shall be used, and seat shall be o. plastic or other non-metallic material having like characteristics which will efficiently replace brass, to assure proper seating with a minimum of leakage.

Plunger shall be of plastic, Buna type synthetic rubber or an acceptable equal, securely attached to the plunger tube and with ample clearance from the cylinder walls to minimize friction and wear.

Hose

Ten feet (10') of hose other than rubber, reclaimed rubber, or synthetic rubber three-eighths of an inch (⅜") internal diameter, shall be provided with each unit, for attachment to the discharge opening of the pump cylinder by means of an effective, universal, adjustable, ferrous metal type hose clamp. Hose shall be reasonably kink-proof. Hose shall be capable of withstanding a hydrostatic pressure of one hundred pounds (100 lbs.) per square inch, and shall be demonstrated to, and meet the approval of the Fire Equipment Section, Safety and Technical Equipment Branch, Division of Industry Operations, War Production Board, before it is incorporated into completed units and delivered.

Nozzle

A one-eighth inch (⅛") diameter smooth bore dual purpose plastic nozzle or a nozzle made of material other than copper, chromium or nickel alloy, having equal corrosion resistance and strength characteristics, shall be provided, secured to the hose by means of an effective, universal, adjustable, ferrous metal hose clamp. The nozzle must not be cemented to the hose. The nozzle shall be of such construction as to emit the water in spray form except when manually held for a solid stream operation. The construction of the nozzle will also be made in such a manner as to permit it to be cleaned and serviced without disturbing connection to the hose.

O. E. Hirst Succeeds His Father as Chief

O. E. Hirst was recently appointed Chief of the Galena, Ill., Fire Department, succeeding his father, the late W. H. Hirst, who was Chief of the Galena Department for over thirty-four years.

The late Chief left the department in the best condition that it has ever been. Within the last six years a 600 gallon pumper and a 500 gallon quad have been put in service, in addition to a fine array of minor equipment. Recently a modern station was completed to house the apparatus and equipment.

CONTROLLING FIRE HAZARDS IN MODERN INDUSTRIAL PLANTS

Fixed Extinguishing Systems Aid Departments in War Plant Fire Control

By A. M. Doxsey*

WITHOUT the aid of a single incendiary bomb, the Axis has jumped United States fire losses by more than 30 per cent since Pearl Harbor. Much of this destruction has occurred in war production plants, where hastily trained workers, speeded production and attempts at sabotage have vastly increased the hazards.

A Smaller 1,000 Gallon Paint Tank at the McInerney Plant Is Protected by the Two-Cylinder System Shown Here. The Tank and the Protecting Nozzles Are Shown in the Center of the Picture. These Dip-Tanks Were the Cause of a Million Dollar Blaze at the McInerney Plant Before Carbon Dioxide Protection Was Installed

To avoid overburdening municipal fire departments now organizing the tremendous job of air-raid protection, many industries are now following advice fire chiefs gave them years ago and taking precautionary measures on their own initiative. In particular they are concentrating on providing adequate first-aid protection for special hazards, which are often the starting point of major fires.

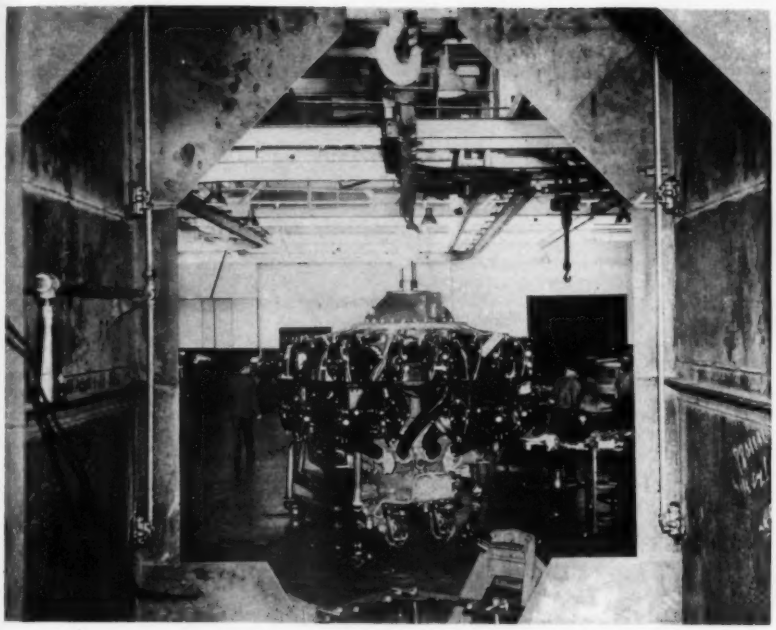
In our current war production drive electrical equipment and flammable liquids are probably most dangerous. Fire in the former can shut down a whole plant through cutting off power and light or destroying communications. Blazes in the latter are so violent and fast-spreading that unless brought under control immediately, they can result in plant-wide fires.

As factories convert to war production, these hazards increase, for war production involves the use of flammable solvents, lacquers, degreasing solutions, fuels, oils and other dangerous liquids on a scale never approached in peace-time. And with sabotage a constant threat, and "green" untrained workers handling these liquids, they constitute a real problem. So, for that matter, does electrical equipment where temptations to overload and force the last drop of power into the lines has greatly increased the fire hazard.

Guarding against these hazards usually calls for extinguishing equipment other than water-lines—or fire-fighting skill rarely found in plant fire brigades. Developing such skill is obviously impossible in the present emergency, so safety engineers are turning to newer, automatic extinguishing equipment, built

*Vice-President, Walter Kidde & Co., Inc.

A Carbon-Dioxide Fire Truck Manufactured for the Colombian Petroleum Company. Similar Trucks with Capacities of Up to 2,000 Pounds of Carbon Dioxide Are Now Being Used by West Coast Airplane Factories to Guard Hangars and Test Fields, and as Crash Trucks at Army and Navy Air Bases



Automatic Carbon Dioxide Extinguishing Systems Are Used to Guard the Sumps or Trenches Connecting Motor Test Cells by One of the Large Eastern Airplane Engine Manufacturers. A Nozzle of the Total Flooding System Can Be Seen at the Extreme Left, While Special Screening Nozzles Ready to Cut Off All Outside Oxygen Are Visible at Either Side of the Opening

right into the hazardous equipment. One of the most popular types is carbon dioxide, the gas whose fire-smothering properties have been employed extensively in the marine field.

For example, both portable and built-in carbon dioxide equipment is now being used in one of the large eastern aircraft engine factories. Portable extinguishers stand "on alert" in the cells where the engines are tested. A high-pressure, built-in system guards the sumps or trenches through which fuel, water, steam, etc., are carried to these cells. This consists of cylinders of liquefied carbon dioxide located outside the potential fire area, a valve operated by automatic, heat sensitive detectors for releasing the gas, a steel piping system leading to the hazard, and shielded nozzles through which the gas is discharged without undue turbulence. In addition, this system is equipped with special screening nozzles which blanket the open ends of the sump with a fire-proof carbon dioxide curtain at the first sign of flame.

In this same factory similar fixed systems are used to guard engine washing booths (where gasoline sprays are used) and paint storerooms.

Another type being used in West Coast airplane factories is the "local application" installation, which resembles the system previously described in that the cylinders are fixed and connected to the nozzles by piping. It differs in that nozzles are located directly on the hazard—an enclosed small-parts washer—and in case of fire the gas is discharged into the washer instead of being used to flood the entire space.

On semi-portable washers in this same plant the cylinder is attached to the equipment instead of being located at a more distant point, and has a manually operated rather than an automatic valve. Other protection includes a thousand pound capacity carbon dioxide truck which is used to guard hangars and test fields. In case of crashes where it has not been possible to save the plane, it has often been possible to rescue the pilot by temporarily controlling the flames with a cloud of the non-toxic gas.

A striking example of carbon dioxide equipment for dip-tanks is the installation at the McInerney Spring & Wire Company now turning out springs and other metal parts for army jeeps and trucks. Nearly all assemblies manufactured in this Michigan plant are finished in a 4,500 gallon dip-tank and carried by conveyor into a large drying oven.

In 1939 a workman opened the door to this drying oven. Flame licked out and ignited a spring assembly on the overhead conveyor. In a few seconds the blaze spread back up the conveyor to the giant dip-tank. Equipment then in use impeded the fire only momentarily, and in a short time the entire factory was ablaze. Loss from that fire was estimated at nearly a million dollars. 1,100 employees were put out of work.

When the new McInerney factory was opened, every precaution was taken to prevent repetition of this disaster. An eight cylinder system with twenty discharge nozzles stands guard over the dip-tank twenty-four hours a day. Special screening nozzles at the conveyor entrance and exit are ready to prevent flames from entering from the outside. A smaller system with sixteen nozzles protects a nearby 1,000 gallon tank. While both systems could have employed the same bank of carbon dioxide cylinders through the use of directional valves, completely independent systems were decided upon to meet the remote possibility of fire occurring in both tanks at the same time. Though there have been no fires at the McInerney plant since these systems were installed, tests during the last two years

A Worn-Out Truck Is Saturated with Oil and Set Afire to Give Factory Employees Practical Experience in Handling Carbon Dioxide Extinguishing Equipment. The Same Truck Can Be Used Over and Over Again, Because the Clouds of White Vapor Completely Smother the Flames Before They Can Do Any Serious Damage

have always shown positive action.

Carbon dioxide protection for electrical equipment is used in many of the large power plants supplying electricity for the manufacture of aluminum. In one mid-western company, a twenty-cylinder system guards a million-watt generator, with discharge nozzles and rate-of-temperature-rise detectors located inside the generator housing. At the first sign of fire, gas from ten high-pressure cylinders is immediately discharged into the housing, penetrating every crevice of the windings. At the same time a gas-operated switch shuts off the motor. The other ten cylinders then discharge an added quantity of carbon dioxide into the housing at frequent intervals in order to maintain the gas concentration until the rotor comes to a stop, and all possibility of re-ignition is ended. Not only has this system resulted in reduced fire damage, but because of the dryness and inertness of the gas, and the absence of after-cleanup, it has cut down considerably on the time that a fire-damaged generator is out of service.

An added measure of protection offered by total flooding carbon dioxide systems has been brought out in recent tests showing that this type of installation is valuable in fighting magnesium incendiary bombs. The carbon dioxide speeds up the burning of the bomb by one third as compared to an 80 per cent speed-up for water. However, the gas offers equal protection against the spread of the fire to surrounding combustibles, and at the same time is not harmful to materials which could be seriously damaged by wetting.

Tanks and warplanes, as well as vital industries, are now carbon dioxide protected. Built-in systems, controlled from the instrument panel, are now standard equipment for motor compartments on tanks and bombers, while hand units supply added safety for the pilots and crews, and carbon dioxide crash trucks stand guard over army and navy air bases.

SMALL TOWN FIRE OFFICERS SHOULD KNOW WATER SYSTEMS

Such Knowledge Improves Efficiency of Fire Fighting Organization

By Walter W. Stephen
Chief, Fire Department, Monsanto Chemical Company, Anniston, Ala.

THERE are numerous phases in the science of fire fighting in which it is essential that the fire chief and officers of the average small town or village department be well versed, and among these is that of having a thorough knowledge of the layout and sizes of the water mains of the town supply system.

It is admissible, for the sake of argument, that officers in charge of a large municipal department may in a few cases not be well informed on this subject. If such officers exist and avoid disaster, it is usually for the reason that their mains and emergency water supply are equal to any situation less than a conflagration.

Men responsible for directing the fire brigades of smaller municipalities, however, must know what is under the ground on every street where they might be called to a fire, and how many gallons per minute may be drawn from the hydrants in the neighborhood.

Initial Layout Based on Knowledge of Underground System

On this knowledge must be based the initial layout of hose lines and what will be done during the first and most important minutes of the fire. The small town department leader generally has little reserve of apparatus or water supply, while the chief of a large city department can send his driver again and again to pull the box for more help. Mistakes at the onset of a fire, therefore, are often irrevocable in the smaller organization. The following examples, which are selected at random from the writer's own personal and actual experience, are given for whatever lessons may be drawn from them. These fires would have been of no unusual import to the first alarm assignment of a large city department, but were situations that taxed the resources of the smaller organizations fighting them. In each case the outcome depended on how well the officers present knew their own water systems.

Some Specific Examples

Example one: A fire had involved the loft and shingle roof of a large two-story, frame residence, situated on a thoroughfare we will call A Street. The fire department had two hose wagons but no pumper. There was good hydrant pressure.

Two hydrants were located on A Street, each half a block from the fire, with a third hydrant on B Street that bordered the rear of the block on which the fire was located.

The officer in charge, arriving with the first hose wagon, knew that both the A Street hydrants were on a four-inch main, and that the hydrant on B Street was supplied by a six-inch main.

Several "sidewalk chiefs" and other members of the crowd loudly criticized the department when the officer directed the driver of the hose wagon, after laying one hose line on A Street, to go around the block to the hydrant on B Street. He sent an aide to direct the second hose wagon to this hydrant also.

The fire was roaring from the roof and dropping down into the second floor. The first hose line was taken in the front door and up the stairway to the second floor. Here, at a desperate stand, pipemen kept the fire from coming down into the second floor until two lines, pulled off apparatus on B Street, were dragged across the block over fences and under clotheslines to the burning building. These were carried to the roof and second floor, with the result that the fire was brought under control with but a thirty per cent loss on the building.

The point to be noted in this example is that had two hose lines been laid from hydrants on A Street, on the four-inch main, neither would have been effective and the fire would have gotten away. There was sufficient water volume, however, to supply one good stream, and this held the fire until two lines from the six-inch main on B Street knocked it out.

Value of Prompt Assistance

Example two: A phone call was received at fire headquarters in a small town, stating that a residence on D Street was on fire. The chief officer looking out of the door, could see a large volume of black smoke going up in the distance. He knew the residence was a large two-story, frame building on a street where the elevation was such that the department with no pumper always had trouble with working fires.

He therefore, before following the apparatus to the fire, told the city clerk who was present to call the department of an adjoining city to send a pumper to aid them.

Pipemen with two hydrant streams were being driven back from the second floor by the fire when the pumper arrived. Streams supplied by the engine, after a hard fight, brought the fire under control with a fifty per cent loss on the building.

The point in this case is that had the officer waited until after arriving at the fire, or after fighting it a while, to call for help the building and others adjoining it would certainly have been lost.

Example, three: A fire occurred in a row of one-story frame warehouse buildings used for cotton seed storage. It quickly involved the structure second in line from the north end. A large brick and joist cotton seed oil mill building was situated a few feet away from Number 4 warehouse at the south end of the row.

No more than three hundred and fifty gallons of water per minute were available from the town water system, and yet the local department laid three hose lines with open nozzles with one and one-eight inch tips. The weak streams that resulted were ineffective and the fire soon involved three buildings, was taking hold on a fourth, and would, in a few minutes, be threatening the oil mill.

It is an incredible fact that not one of several officers of this volunteer fire brigade realized why there was no nozzle pressure. Their reaction was that the water system had failed.

The author, who was a desperately fighting young pipeman on that day twenty odd years ago, knew what was the matter, but was not in a position to give advice to his distracted superiors.

The department of an adjoining town

had been called for aid, although there was no apparent logic in this action, for it had no pumper. The chief, however, realized the situation at once and had two hose lines cut off. One good stream was immediately available. The fire was stopped in the last warehouse, with the other three total losses. The cotton seed oil mill was saved from an exposure that must have resulted in its loss.

The point in this illustration is that an unbelievable lack of information by department officers nearly resulted in a conflagration.

Conclusions

The following conclusions may be drawn from these experiences: First: That it is imperative for every small town fire officers to know very thoroughly the location of every water main and the volume of flow at working pressure from every hydrant in his municipality. Even though no plug cap gauge or pitot gauge is available, a very useful visual estimation may be made of available streams by trying them out in various locations. Second: That action based upon this knowledge must be taken to make it of value decisively and immediately at fires, and with determination and perseverance when it is necessary to submit recommendations to city authorities. Third: That lack of information regarding the subject will surely terminate in disaster and loss. It is too late to begin the study of hydraulics when men on the hose lines are being driven back by the fire.

Fire Protection at Fort Riley, Kans.

The Calvalry Replacement Training Center at Fort Riley, Kans., has a selectee manned station which keeps pace with today's latest developments. Firemen are Selective Service men who have been developed into soldiers after thirteen weeks of basic cavalry training. Preliminary instruction completed, these men were assigned to the fire department.

A trim building housing two new trucks and affording sleeping quarters for the twenty man department is the starting point. All equipment is new.

The soldiers, on duty forty-eight hours, then off twenty-four, are under command of Fire Chief James H. Clift. Chief Clift is a retired civilian chief now employed by the Army under Civil Service and he finds the selectee crew—few of whom ever had hook and ladder experience—"one of the smartest, most willing groups" he has ever organized.

There are daily drills, though at no prescribed time. Without warning the whistle blows and orders are phoned to proceed to a certain point. The element of surprise is emphasized.

The men go into action without a moment's loss. Drivers of the trucks must know the Replacement Center thoroughly so that best avenues are taken to arrive as soon as possible at the designated "fire" point.

Status of New York Police and Firemen in Draft Is Settled

Mayor F. H. LaGuardia disclosed recently that, after a long controversy, the city and the Selective Service Administration had agreed to a policy governing the drafting of police and firemen.

Mayor LaGuardia said that the police and firemen who are certified by the commissioners of their respective departments as experienced and indispensable will be deferred. Newcomers to the departments and those whose experience has not been extensive will be subject to military service.

The Mayor has worked out the formula with Brigadier General Lewis B. Hershey, National Selective Service Administrator, and Colonel Arthur V. McDermott, New York administrator.

Men who are experienced fire and police officers and indispensable will be recognized. Those men who have just entered the service or who have not reached the point at which the respective commissioners can certify that they are experienced police and fire officers will be called.

When selective service first went into effect and local boards began drafting experienced police and firemen, Mayor LaGuardia bitterly denounced this policy. In modern warfare, he contended, police and firemen were more valuable on their jobs than in the armed forces.

Perry Fire Chief at Salina Cantonment

Chief James A. Perry has resigned as Fire Chief at Camp Crowder, Mo., to become Chief of the Salina Triangular

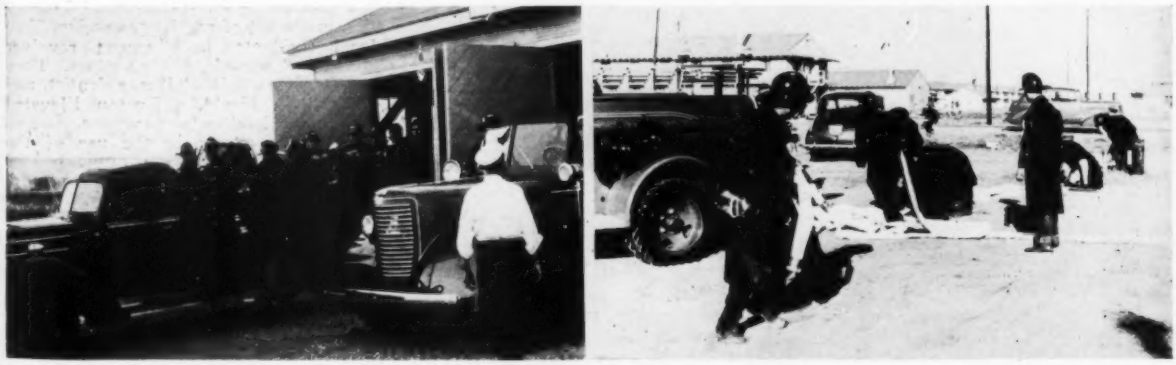
Chief James A. Perry

Cantonment. Chief Perry was Fire Chief at Camp Crowder during the entire construction period and continued on with the War Department after it took over the Camp. He was also a former member of the Kansas City, Mo., Fire Department.

O. D. T. Asks Postponement of Conventions

Deferment for the duration of all meetings, conventions, and group tours which are not closely related to furtherance of the war effort was called for on June 19 by Joseph B. Eastman, Director of Defense Transportation. Mr. Eastman also asked that all state and county fairs be postponed.

Attendance at meetings which are closely related to the war program should be skeletonized, Mr. Eastman said.



Selectee Firemen Off to Dry Run at Fort Riley

Left: Out for a rush drill come the shiny 1½-ton truck and the 5-ton truck as the Republican Flats fire station answers a call. Chief James H. Clift directs troopers. Right: Off the truck and in operation, these soldier-fire fighters, few of whom had previous hook and ladder experience, waste no time.

Ambulance Given to Ocean Grove

The Ocean Grove, N. J., Fire Department First Aid Squad, late last year, put in service their new Knightstown-Cadillac ambulance. This ambulance, which is completely financed by donations, serves the residents of Ocean Grove and vicinity.

The ambulance is equipped with an E & J Resuscitator, H & H Inhalator, splints and other first aid material necessary for accident and beachfront emergencies. The entire equipment is carried in special compartments built in the body. By the use of hooks and braces two folding stretchers can be hung from the roof allowing four stretcher cases to be transported at once.

The ambulance is housed in fire headquarters and answers all alarms of fire, as well as first aid calls sounded on the regular fire alarm system. It is manned by a membership made up of members of the three fire companies, each member holding an Advanced Red Cross Card. The Squad answers an average of 250 calls a year and is a member of the New Jersey First Aid Council.

New Ambulance Recently Put in Service in Ocean Grove
Seated at the Wheel Is William Ducan, President of the Squad

Man Who Buried Gas Fined $100

A Waterbury, Conn., man who buried fifty gallons of gasoline in his backyard for a month was fined $100, the maximum penalty, by the Municipal Court recently, after testimony was submitted by the Fire Marshal.

Fire Marshal Dan Lahey testified that he and his aide found the drum buried in the backyard of the home of the accused. He said the presence of the drum created a dangerous hazard because of its proximity to houses, including a six-family block in the neighborhood. No license had been secured for the storing of gasoline.

The marshal acting on information that such a drum was buried, dug a four-foot excavation in the yard without results. They left and on returning an hour later discovered the accused digging up the drum.

Fire Prevention Ordinances Adopted by 12 Cities

Eleven Florida cities and the City of Duncan, Oklahoma, recently have adopted modern fire prevention ordinances, making a total of twenty-four municipalities which are known to have enacted such legislation within the past year, it was announced by W. E. Mallalieu, General Manager of the National Board of Fire Underwriters, and Harold N. Mann, Chairman of the Fire Prevention Committee of the National Association of Insurance Agents.

Cities in Florida which have adopted fire prevention ordinances are Clearwater, Daytona Beach, DeLand, Gainesville, Gulfport, Lakeland, Live Oak, Longwood, Lynn Haven, Marineland and Orange City. The Florida Association of Insurance Agents and J. Edwin Larson, State Fire Marshal of Florida, were largely instrumental in convincing municipal authorities in these cities of the need for modern fire prevention ordinances. These cities have been added to the honor roll of twelve cities which previously had adopted similar ordinances. All of them have received, or will receive, Fire Defense Citations in recognition of the public service they have rendered to their citizens.

Adoption of the Suggested Fire Prevention Ordinance recommended by the National Board of Fire Underwriters has been advocated by that organization and the National Association of Insurance Agents since early last fall. To date approximately 1,000 organizations and individuals have indicated their desire to have such an ordinance adopted to help preserve the nation's material resources against destruction by fire. The total includes thirty-seven State associations of insurance agents and 195 local associations. The remaining 800 comprises individual agents, fire department and other public officials, insurance company representatives, luncheon clubs and other civic organizations. More than 5,500 copies of the ordinance have been distributed.

Needham Firemen Win Sharpshooting Badges

Sixteen Needham, Mass., firemen, the first fire department in the United States to have every one of the members of the permanent department awarded a revolver sharpshooter's badge as a result of their training for home defense, were recently presented their badges by Harry J. Robinson, Executive Vice-President of the New England Police Revolver League.

Early last winter, Chief Richard M. Salamone of the Fire Department had his firemen begin a course of instruction in the art of revolver shooting. Two local residents, both expert revolver shots, voluntered as instructors. They are Dr. Harold D. Pullen, a dentist, and Clifford L. Heald, a Boston Elevated Railway official, who gave the firemen a complete course in the use of the revolver in the modern range of the Needham Police Station by arrangement with Chief Thomas Welch, who assisted in the instruction.

In addition to Chief Salamone, the Needham firemen who completed the course were Deputy Chief John A. Keith, Captain Walter M. Mullen, Lieutenants Sidney P. Brearly and Leo C. Brady, Chief's Aide Harold T. Vincent and Privates Samuel Smith, George F. Coombs, John Cotter, Everett Brown Carl R. Parker, John A. Rhynd, Warren M. Parker, Timothy Coughlin, Frank W. Scotton and William B. Colter.

Needham's Sharpshooter Firemen
Harry J. Robinson, Executive Vice-President of the New England Police Revolver League is shown pinning on a sharpshooter's badge on Chief Richard M. Salamone.

Carbon Dioxide Fire Truck Protects Airport

Research activities at Wright Field, the Army Air Forces' Materiel Center at Dayton, Ohio, have a two-fold purpose: to discover more efficient methods of destroying the enemy; to develop better means of protecting the lives of our Air Forces. Recently the Equipment Laboratory of the Experimental Engineering Section announced the development of a new life-saving device—a fire-fighting crash truck which can quickly and effectively smother a fire by throwing thousands of pounds of carbon dioxide on a burning plane in less than three minutes. Great clouds of CO_2 instantly envelop the plane, not only driving back the flames, but cooling the hot metal sufficiently to allow the rescue crew to pull out the occupants with a better chance of survival.

Recently Lieutenant Colonel Rudolph Fink, Chief of the Miscellaneous Unit of the Equipment Laboratory, Wright Field, and W. E. Huffman, civilian engineer, put the truck, a result of two years research, through its paces. The test proved successful.

Prime purpose of this newest piece of fire fighting equipment is to save lives. Salvage of the plane is secondary. "If we can get to a crash in time to slow down the flames enough to pull out the crew, we have accomplished a prime mission," said Colonel Fink. "Of course, if we can save the plane too, so much the better. But what we were looking for was life saving equipment. This truck seems to be the answer."

Firemen Injured in New Britain Fire

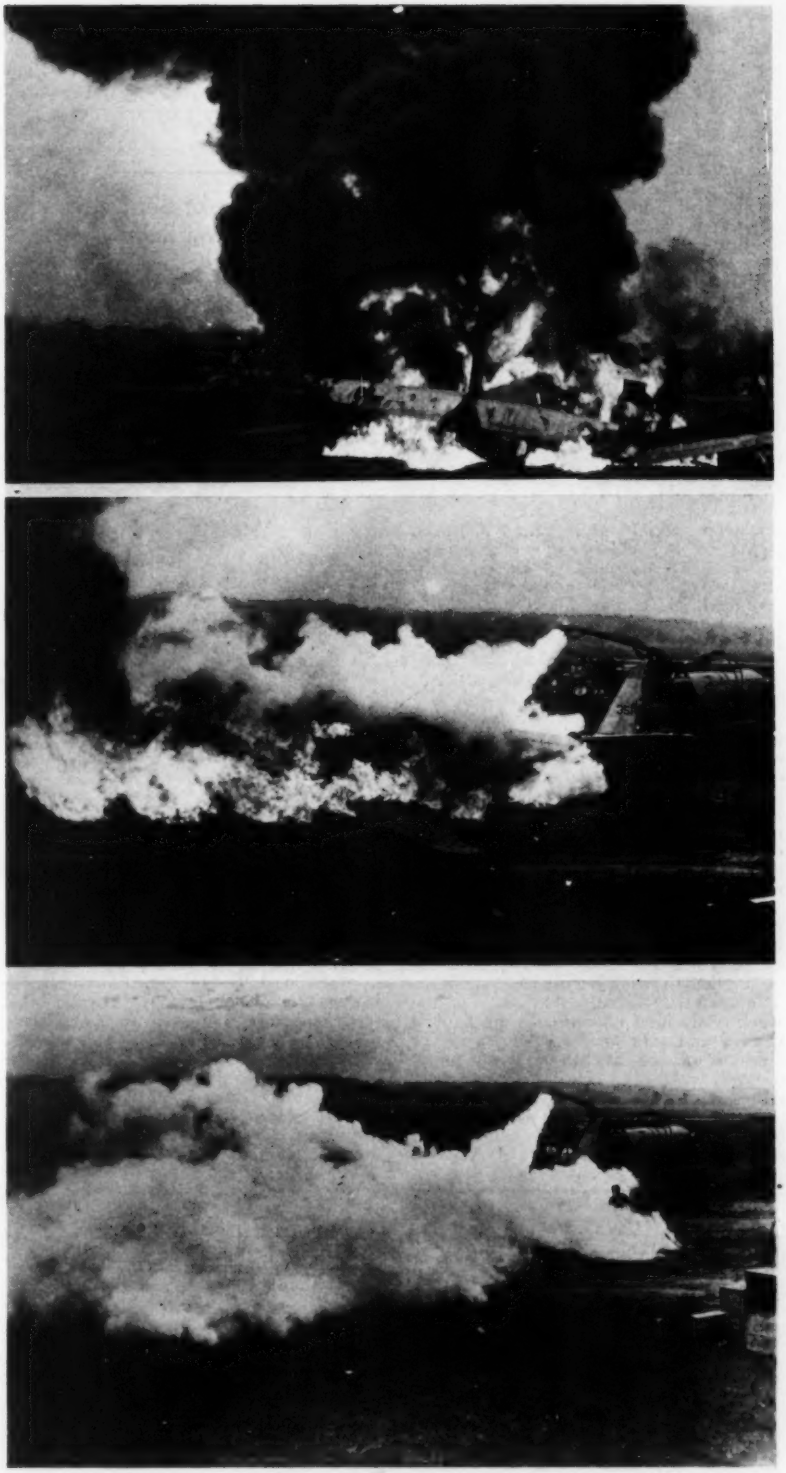
Five members of the New Britain, Conn., Fire Department were injured, one fatally, and damage estimated by Fire Chief William J. Noble at $100,000, on June 27 when fire swept through the three-story Capitol Theatre Building in the heart of the city's business district.

A ventilator falling from the roof of the building struck Firemen George Parsons and Henry Fenn, sending both to the New Britain Hospital with head injuries. Parsons died on July 1 after several blood transfusions failed to help him. He suffered fractures of both legs, a possible fracture of the spine and an arm injury. Fenn was also severely injured. Firemen Zigmund Parker, Robert Smith and Lester Barnes were also injured during the height of the blaze.

The roof of the building caved in soon after the first alarm was sounded at 3:30 A.M. and Deputy Chief Michael T. Butler was of the opinion the fire started long before that hour because the interior of the theatre was a mass of flame when firemen first arrived on the scene.

Factory fire departments were called at 4:30 A.M. by the blowing of whistles and many residents thought an air raid alarm had been sounded. Fire companies from the nearby towns of Plainville and Newington responded to aid the New Britain department. The theatre was owned by a real estate subsidiary of Warner Brothers, Inc., and recently had been operated only on week-ends. Chief Noble said the cause of the fire was undetermined.

THOMAS F. MAGNER.



Airport Truck in Action at Fire

Top: Plane afire! An old plane wreck, saturated with 200 gallons of gasoline, was set afire by Air Force engineers to simulate a crash and allowed to burn furiously for ninety seconds before fire fighting equipment was summoned.

Center: Side view of the burning plane shows how flames are driven back by the carbon dioxide onslaught as the truck drives up with all front nozzles shooting.

Bottom: Wrapped in a blanket of carbon dioxide, the flames simmer down to the vanishing point. It would be possible for rescuers, in asbestos suits, to enter the plane. Many degrees colder, in fact, 110 degrees below zero F., than the surrounding air, carbon dioxide coats the plane and ground with carbon dioxide snow, greatly reducing the temperature.

Supplementary Water Supply for Fire Fighting

The Ministry of Home Security in Great Britain recently announced that the Fire Council had approved an intensified program involving an expenditure of about $20,000,000 for the provision of supplementary water supplies for fire fighting. The object is to assure that in areas of high risk ordinary supplies of water shall be supplemented by auxiliary tanks and storage basins. Large supplies of steel tanks and of a special form of piping, which can quickly be laid and readily repaired, are being obtained.

To secure the rapid execution of the program, important organizational changes have been made. It is now the business of Regional Commissioners to see that the plan is effectively carried out by the local authorities concerned.

The central organization of the Home Office has been strengthened both administratively and technically. In particular, a special water section has been added to the chief engineer's branch under a deputy chief engineer. The section will be responsible for giving technical guidance on water supply questions, and will be represented on the Fire Council.

Basements of Bombed Buildings Used

One simple method of providing static supplies of water for use as an auxiliary to the mains is to make use of the basements of buildings which have become untenable. Consideration has, of course, to be given to the location, its accessibility to the street, the construction and strength of the basement walls and their condition as a result of fire or bomb damage.

Mastic asphalt is the recognized material for the purpose of waterproofing basements, owing to its adaptability, its ductility and the ease with which it can be applied to brick or concrete surfaces. The material arrives at the site of the work ready for application in mechanical mixers and sets hard in the course of an hour or so. It has no toxic effect on the water even after long periods of storage.

Little preparation work is called for, but on occasion it may be found necessary on account of superficial damage, to level up the surfaces of the wall or floor with a sand and cement screed. The asphalt will remain in position without any internal loading coat of concrete and brickwork, as is necessary in the case where external pressure is to be dealt with.

—Water and Water Engineering.

Wells in Lake Supplement Hydrant Supply

With the fire department of Ocean Grove, N. J., faced with the fact that their entire hydrant water supply could be cut off by one well-directed bomb, the officials of the department staged a test recently to determine the possibility of using two lakes which bound the resort town on the north and south.

The hydrant supply, which is maintained by a commercial, not municipal, water works, is fed to the town through a large line entering at a point near its southwest border, and, as it is the only feed line, it could quickly be destroyed, leaving the town without water. Faced with this, the Board of Fire Commissioners have constructed two fire wells in Fletcher Lake, bounding the town on the south. Tests showed the well supply to be ample for two, or even three, 1,000 gallon capacity pumpers.

Using the beach-front area as the scene for the test, the department stationed their 1939 Ahrens-Fox 1,000 gallon capacity pumper at the well, ran 1,400 feet of 2½ inch hose from this engine to another Ahrens-Fox pumper of equal capacity, then ran an additional 500 feet of 2½ hose to an American-Lafrance 750 gallon capacity reserve pumper, which pumped through a 150-foot line to nozzle.

At the height of the test, the first engine, Engine 3, was delivering 225 pounds pressure, using the minor side of the pumps. The second engine, Engine 2, was receiving 100 pounds pressure at the intake and boosted this to 150 pounds pressure. The third pumper received a pressure of 50 pounds and boosted it to deliver 65 pounds at the nozzle.

Fire officials were well pleased with the test, for it showed that water could be supplied to the center of town from the lakes' supply for use in the event of a disruption of the commercial supply.

The tests were under the direction of Fire Chief H. Warren Brown, with Assistant Chiefs Harold Heckman and Frank Wilson assisting. Engineers Wesley Nagle, Albert Catley and George Malsbury were in charge of the engine companies participating.

Frank L. Wilgus

Pumper Drafting Water from Well

A Storage Basin Completed on a Partly Cleared Site

Another Example of the Construction of Storage Basins by Waterproofing Basements

Hangars and Planes Damaged by Fire

Combined efforts of fire companies from the South San Francisco, San Bruno, San Mateo, Hillsborough, Millbrae and San Mateo County (located at Redwood City) fire departments saved a number of hangars and planes at the San Francisco Airport June 15 after the plane of a young army pilot crashed as he attempted to land at the airport, about 15 miles south of the heart of San Francisco on the Bayshore Highway.

The pilot, Second Lieut. James H. Mitchell, 23, Cleveland, O., was killed in the crash, landing his plane after it developed motor trouble as he was coming in for a landing.

An Army spokesman at Hamilton Field later said:

"Lieutenant Mitchell portrayed the high type of courage displayed time and again on our far flung battle fronts by the Army Air Forces when he maneuvered his wildly careening fighter craft from a path which would have flung it into the open door of a hangar housing over 200 enlisted men, and crashed in flames against a dividing partition between two maintenance hangars.

"Fellow pilots of Lieut. Mitchell said it was apparent the young flyer, fully realizing his own predicament, banked his speeding craft when only a few feet from the ground, causing his left wing tip to drag and change direction of his line of flght, avoiding the quarters of the enlisted men and crashing the plane against the maintenance hangars. He thereby saved the lives of a large number of men who were relaxing in their quarters."

As the plane hit, the gasoline tanks burst and the gasoline ignited, spattering the hangars with flame. Heat was so intense that machine gun bullets exploded and peppered the vicinity.

It was then the field fire department summoned outside help.

The outside companies managed to halt the flames before they destroyed other planes and hangars. The Army later said that two hangars and four planes damaged in the fire could be repaired.

BOB GREENOCK.

Arizona Firemen Meet

The Nineteenth Annual Convention of the Arizona State Firemen's Association was held in Prescott on June 18 and 19. Among the speakers on the two-day program were Governor Sydney P. Osborn of Arizona; Jay W. Stevens, Executive Secretary of the International Association of Fire Chiefs; Major Joseph Hensel, Stanford War College, who gave a demonstration of thermite and magnesium bombs and their control; a Mr. Miller of the Federal Bureau of Investigation, who spoke on Sabotage; H. G. Ufer of the Underwriters' Laboratories; Fred Ames of the National Association of Manufacturers; Kelly Turner, State Director of Civilian Defense; C. W. Withers, Engineer, Arizona Equitable Rating Bureau, and James Hall, Special Agent of the National Board of Fire Underwriters.

The following officers were elected: President, Frank L. Porter, Kingman, Ariz.; First Vice-President, I. E. Dawson, Phoenix; Second Vice-President, C. H. Spain, Tempe; Secretary-Treasurer, H. W. Reggin, Luke Field. Members of the Executive Committee include C. Harrison, Williams; R. T. Black, Tucson; G. A. Golding, Safford; and Elgin McCarty of Williams Field.

Twenty-five Arizona departments were represented at the convention.

Fire Protection for Lake County

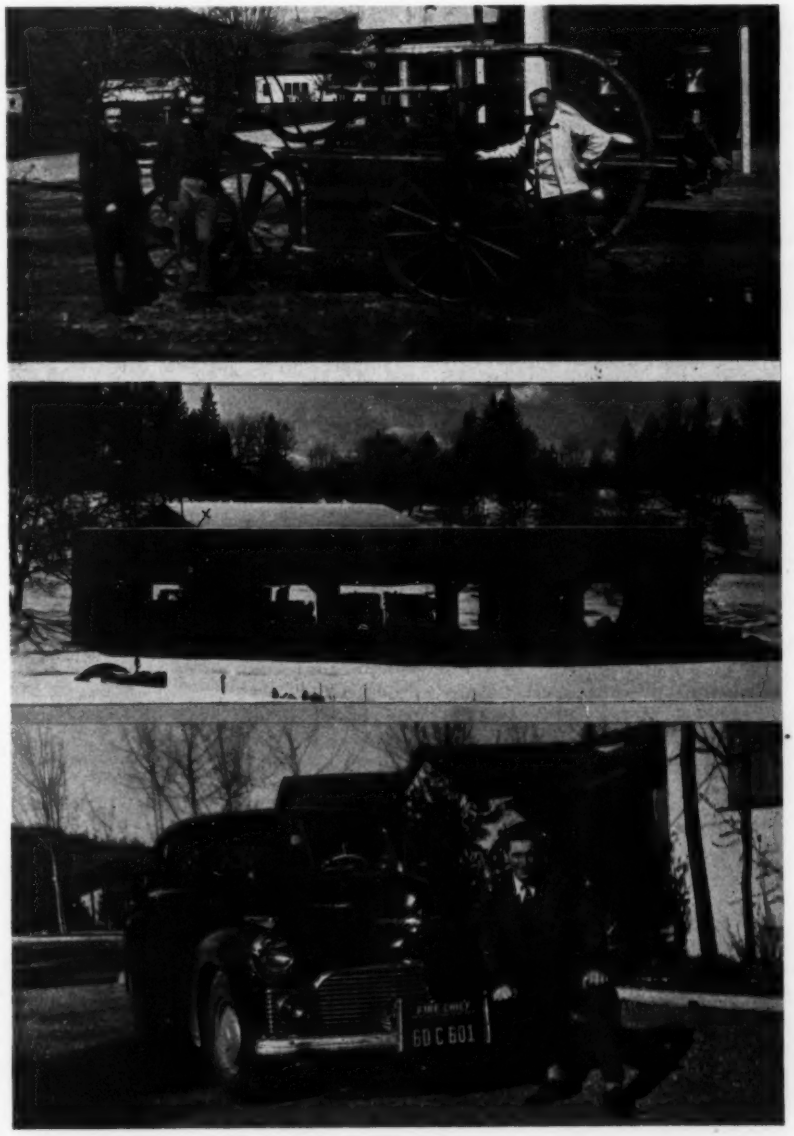
Lake County, located in northern California, has had in service for many years an old pumping engine. It is a Hunneman No. 675, which was manufactured in Boston, Mass., in 1864 and brought around Cape Horn to California in the same year for the fire department. Max Hoberg, father of the present Chief Paul Hoberg of the resort town of Hobergs, was Chief at that time. This old engine is still giving good service. It is transported from place to place on a tractor. The marvel is that it answers all alarms. It was given a workout this last winter, pumping out basements of stores and houses in the town of Upper Lake.

Two of the towns in the county, Upper Lake and Hobergs, have negotiated the purchase of nine ambulances for national defense.

Upper Lake is building a new firehouse, under the direction of Chief J. C. Shirley, large enough for four engines and the old relic. Hobergs' Fire Department is purchasing two new fire engines.

Chief Paul Hoberg is in charge of all citizens defense fire activities in Lake County.

V. P. BARTLEY



Scenes from Lake County

Top: Old engine still in service. Standing next to it, from left to right, are former Assistant Chief V. P. Bartley of Taft, Cal.; Fire Chief J. C. Shirley of Upper Lake, and Fire Commissioner Ted Crowell of Upper Lake. Center: Fire Station at Hobergs. Bottom: Fire Chief Paul F. Hoberg.

Firemen Build a Church

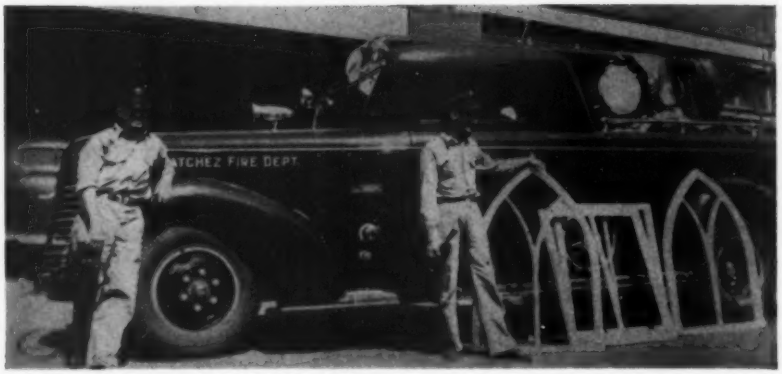
Few churches have the distinction of being built by firemen, but the little Church of St. James near McNair, Miss., can claim the honor.

A number of weeks ago, while the building was under construction, Bill Druetta and Dick Walcott, firemen of Engine Company No. 7 of Natchez, Miss., volunteered to build the pews for the church which was to have a seating capacity of 120. Undaunted by lack of funds, material, equipment and experience, they rolled up their sleeves and prepared to tackle the job.

A borrowing campaign was launched and the necessary equipment secured. Lumber companies were generous with donations of material and finally the two firemen retired to their own private workshop in the engine house for a determined session of carpentry.

With the completion of the pews, their generosity did not stop there. Learning of the other needs of the church and realizing the inadequacy of the funds on hand, the firemen again volunteered their services. They fashioned Gothic frames for the windows, window sashes, a vestment cabinet, priedieus, a confessional and other necessary furnishings.

Albert Bauer, another firemen of No. 2 Engine House, topped off the job with a glistening coat of paint and then installed all the glass in the church.



Bill Druetta and R. A. Walcott with Some of Their Completed Work

Rockland County First Aid Council Elects Officers

At the fourth annual meeting of the Rockland County Emergency and First Aid Council, held in the quarters of Moscarella Post No. 199, American Legion, Spring Valley, N. Y., on May 29, officers were elected for the coming year.

The new President is Dean B. Seifried, of New City, N. Y., Engineer of the Rockland Gas Company and a Red Cross instructor. The Vice-President is George W. Wallace, Jr., of Spring Valley, County Civilian Protection Director and originator of the "Legion Brigade" idea. William Paul Babcock was reelected Secretary. Miss Eunice Riedyk of the Nyack Community Ambulance Corps was named Financial Secretary and William Charters of Nyack, recently Captain of the Nyack Fire Patrol, and a Red Cross instructor, Treasurer.

After the election, Secretary Babcock, acting on behalf of the Board of Directors and delegates, presented a car heater to the retiring President, Ex-Chief C. Ray Ackerman of Nyack, who has held that office since the beginning of the organization, and who has been forced to relinquish this post owing to the pressure of his new duties as general First Aid Director for the County War Council, and in particular, for the Nyack Chapter of the American Red Cross.

The Council is revising its by-laws to enlist women as well as men, and individual first aiders as well as squads. Its monthly journal will continue to be issued under the name "The Blanket."

When tire and fuel supplies are better, the Council will move toward formation of a statewide council.

Photo by "Journal-News"

Secretary Babcock Presents Car Heater to Retiring President Ackerman

Left to right are the newly elected President, Dean B. Seifried, retiring President C. Ray Ackerman, Secretary William Paul Babcock and Vice-President George W. Wallace, Jr.

Phoenix Society Active in Defense

San Francisco's fire fan club, the Phoenix Society, is showing the country what real fire fans can do when the chips are down.

"We," said Dr. Ernest Ker, president, "are no longer on a hobby basis. This is serious business and every member is doing his part."

As a unit, the society has been inducted into the Red Cross where it has become a roving relief committee. They are ready to go to any part of the city to set up a complete Red Cross welfare and shelter organization. Every member has been assigned to some particular function: survey, rescue, medical aid, shelter, food and fuel, clothing and bedding, transportation.

They report, at an air raid alarm, to Red Cross headquarters, ready to be sent wherever most needed.

Within 20 minutes of the last air raid alarm, 15 of the 25 members were at their posts although they had to walk some distances because blackout lights for their cars and credentials have not yet arrived.

Tom Larke, Jr., once chairman of the Society, is now the sparkplug of the local Red Cross Disaster Relief Comsion. Under his direction, 12 central committees have been set up, based on the 12 fire battalions in the city.

BOB GREENOCK

Never Too Old

Mrs. Helen J. Gardner, a 75-year-old Bridgeport, Conn., woman lost her life on June 22 while attempting to light a cigarette. When firemen under command of Asst. Fire Chief Elmer V. FitzGerald arrived at the Gardner home on West Avenue in response to a box alarm from a nearby corner they found the aged woman, an invalid for many years, in an unconscious condition in a wheel chair.

First aid was rendered by firemen until an ambulance arrived. Her injuries included first, second and third degree burns of the abdomen, face and chest and she died the following day from the effects of the burns. Her daughter, Helen L. Gardner, played the title role in what is believed to be the first six-reel movie, "Cleopatra."

THOMAS F. MAGNER.

San Francisco Warehouse Fire

Federal and municipal authorities began a thorough investigation into the cause of a blaze which destroyed a warehouse and a large quantity of military equipment at 462 Bay Street near San Francisco's Fishermen's Wharf recently.

Fire Chief Charles Brennan estimated structural damage at $25,000, but no estimate of the damage done to the crated automobile, tractor and truck engines, wheels and tires, was available.

Extensive damage was done to an adjoining sheet metal plant engaged in war work, belonging to the California Steel Products Company.

The warehouse, belonging to the San Francisco Warehouse Company, was a one and a half story wooden building while the sheet metal plant was a corrugated iron building of the same height.

A passerby saw smoke mushrooming through the roof of the locked, unwatched warehouse and pulled Box 1425 at 12:31 p.m. A vicinity box, 1844, was pulled two minutes later. First companies in immediately sounded a third alarm from Box 1425 at 12:35. At 12:45 there was a special call for Water Tower No. 4 and at 12:48 the Ashbury Avenue high pressure water tank was put in service to back up the Jones Street tank in supplying high pressure over the special system.

Twelve pumpers, three truck companies, three high pressure wagons, the water tower and other miscellaneous equipment responded.

Firemen quickly covered the fire with high pressure streams but the roof of the warehouse fell in almost immediately.

When Chief Brennan arrived at the scene, he ordered extraordinary precautions taken because the area is studded with plants and installations of military importance. The day before the fire, the army had removed part of its equipment from the warehouse.

There were three explosions, presumably from chemical tanks in the warehouse, that rocked the neighborhood.

Ed Bortolussi, foreman in the sheet metal plant, said he was in the plant for a short time at about 10 a.m. and heard boys playing in the vacant lots behind the plant and warehouse.

The steel products company was preparing to evacuate the plant for military reasons but none of its machinery and equipment had yet been moved and it suffered considerable damage.

The fire was only a block from Fishermen's Wharf and a short distance from the U. S. Army Transport Docks. Firemen laid extra lines to prevent the fire from spreading toward the docks.

Police were aided by truckloads of military police rushed to the area from Fort Mason and the Presidio, a short distance away.

BOB GREENOCK

Iowa Fire Fighters Meet

H. C. Schrage of Waterloo, Ia., was re-elected President of the Iowa Association of Fire Fighters at the 20th annual convention held in Sioux City during the first week of June. Auxiliary members named Mrs. Viola McTwigan of Council Bluffs President.

Uncertainty resulting from the war will delay selection of the 1943 convention site until late fall.

Only new association executive member named was Thomas G. Wheeler, President of Local 7, who was elected Third Vice President. Officers re-elected to the Executive Board included Fred Christensen of Council Bluffs, First Vice President; Bayard Lodden of Ames, Second Vice President; and William Hottel of Des Moines, Secretary-Treasurer.

Association trustees elected were Fred Condon of Cedar Rapids, and James Quinn of Davenport. C. F. Courts of Burlington was re-elected.

Auxiliary officers chosen were Mrs. Viola McTwigan, Council Bluffs, President; Helen Hallahan of Dubuque, Vice President; Mrs. Mollie Freeberg of Des Moines, Secretary-Treasurer; and Mrs. Velma Anderson of Davenport, Mrs. Dollie Brollier of Waterloo, and Mrs. Lottie Nelson of Cedar Rapids, Trustees. The retiring President was Mrs. Irma Sternberg of Davenport.

Mayor David F. Loepp was the principal dinner speaker. Toastmaster was Municipal Judge H. R. Kenaston.

Other speakers at the two-day convention were: Harold F. Nelson, State Representative from Woodbury County; Detective George Kean, Secretary of the Iowa Policemen's Association; John Strom, State Fire Marshal; William D. Buck, St. Louis, President of the Second District of the International Association of Fire Fighters; Lynden Murphy of Iowa State College; A. A. Couch, President of the Iowa State Federation of Labor; Earl Byers, President of the Iowa Firemen's Association; Forrest Olson, Superintendent of Public Safety, Sioux City; Charles B. Kuhl, Chief of the Sioux City Fire Department; George M. Kellogg, former Sioux City Fire Chief; Fred W. Baer, President of the International Association of Fire Fighters; State Representative Robert Carlson of Sioux City; Frank B. Hallagan of the Iowa Selective Service System, and Floyd Smith, President of the Sioux City Trades and Labor Assembly.

FLOYD EMERSON

Trailer Built by Ogden Engine Company

Ogden Engine Company of Dobb's Ferry, N. Y., a volunteer unit made up of forty men from all walks of life, realized that more fire equipment was necessary in the village during this national emergency.

Several months ago the members began collecting old newspapers and magazines from the residents of the community. Part of the money received from the sale of these newspapers was used to finance the construction of a trailer, capable of carrying 700 feet of 2½-inch hose and other necessary fire fighting equipment. This trailer was built by the members of the company under the supervision of the Fire Chief William French, and his father, Edwin B. French, local Building Inspector.

The body is made of oak and is six feet long, five feet wide and one foot high, mounted on a Ford chassis, and can be drawn on the road by any passenger car or truck.

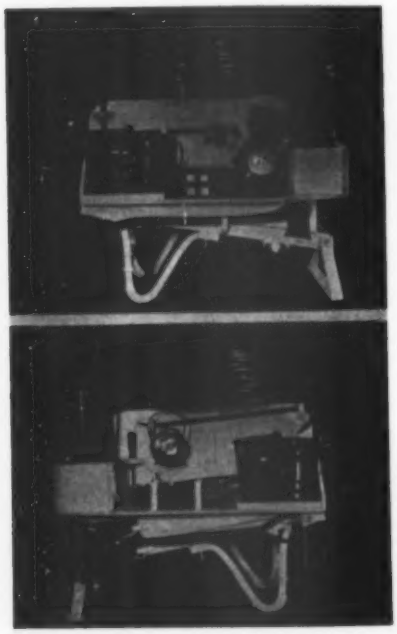
Two Views of Ogden Engine Company No. 1 Trailer

WITH OUR READERS

Industrial Fire Protection

To the Editor:

A short time ago I was called to visit one of our local factories to see some of the things they had done in regard to giving extra protection against fire. I was much pleased to see that they had taken a number of the recommendations we had made.



Two Views of the One-Man Fire Protection Unit

Mr. Earl C. Allmand who is in charge of fire protection showed me what he had rigged up to give still further protection to the plant. The pictures included herewith show their one-man equipment assembled on the frame of a wheelbarrow. Each unit holds the following equipment: one 2½-gallon foam extinguisher, one pump tank, two sand pails, fifty feet of garden hose, shovel, ax, hand lantern, electric lamp with fifty foot extension cord, wrecking bar, pipe wrench; carbon tetrachloride extinguisher, first aid kit, and a coil of rope.

They have three floors to their factory and are planning to have one of these units on each floor.

Very sincerely yours,
BEN J. ZAHN, Chief
Ann Arbor, Mich.

Responding to Rural Calls

To the Editor:

Recently the Pitsburg (Ohio) Fire Department and the Laura Fire Department responded to a fire at a home south of here. We were able to save most of the household goods on the lower floor of the eleven room house, but everything upstairs except some clothes was destroyed in the blaze. We were able, however, to keep the flames from spreading to the barn and other outbuildings.

The owner of the property was satisfied with our efforts to save his farm buildings. I often hear men argue that it does not pay to send fire apparatus to rural fires. Undoubtedly store box fire fighters would not send apparatus to fight rural fires. The public at large feel much better after they realize that the fire department will respond to a rural alarm, than if they sent for help and the department refused to give it for one reason or another.

Rural service has come and is going to stay as long as we use motorized apparatus. So far as I am concerned, I make no difference in fighting a fire in the country or in town, if only the farmer could see that it is to his benefit to construct a cistern or dig a well for farm fire protection. Would that the day will come when there will be more effort along this line.

Yours truly,
HERBERT STUTZ, Chief
Pitsburgh, Ohio

Activities of the Hamilton Fire Department

To the Editor:

The Hamilton, Ont., Fire Department has experienced one of its busiest years in 1941, having had an increase of 425 alarms over the previous year, with a loss of over $350,000. However, the year 1942, if the first three months are any indication, promises to surpass that of last year. Three major fires have been experienced by this department so far this year totalling some $242,000, bringing total to date to $270,000. The three aforementioned fires were in business blocks downtown and had reached serious proportions before alarms were turned in.

Instructing and training members of the A. R. P. Fire Service has occupied considerable of our time since last summer. Some 350 men have passed through the training school in the past ten months. The Dominion Government has supplied these men with uniforms, rubber boots and steel helmets. Just recently A. R. P. members have been permitted to ride on the apparatus to fires, in order to complete their training as fire fighters.

Last year the city purchased a 600-gallon Bickle-Seagrave pumper, and at the first of this year placed an order for another of this type. They will replace 350 gallon pumpers built on a commercial chassis which have been in service some eighteen years.

The total complement of this department totals 187 including officers, men and alarm operators. Men taken on to fill vacancies since the start of the war are temporary appointments, the maximum salary being set at second class firemen's wages, without participation in the Pension Fund. The men selected to fill these vacancies are soldiers discharged as medically unfit for active service, but still capable of doing duty as firemen.

Yours very truly,
K. CASSEL, Chief
Hamilton, Ont., Fire Department

Rural Fire Truck

To the Editor:

A short time ago we felt the need of an additional fire truck for forest fire service. A truck was purchased and equipped with a 400 gallon tank of water, a deck gun, a dozen water cans, 1,000 feet of one-inch hose which

Walpole's Forest Fire Truck

is placed conveniently in baskets, 750 feet of one and a half-inch hose which is stored in a drawer under the water tank. Most important of all is a large power-driven winch with 300 feet of one-half inch cable.

The truck has two transmissions which give sixteen speeds and thus giving it the power of an army tank, and enabling it to pull itself out when stuck in soft ground or in the mud. If its own power fails to work, the winch is hooked to a solid object, thus extricating it.

Many times the truck has been used as a wrecker to release apparatus of neighboring towns. I have in mind the success with which this truck was used at the Canton Rubber Company fire and the huge Fall River fire. The winch has also been used to remove large bales and also in taking hay from a burning dairy barn. It has proved to be a valuable money and time saving device.

In my opinion the winch should be a permanent feature on all apparatus. It has saved our town hundreds of dollars.

Very truly yours,
CHESTER L. DONNELL, Chief
Walpole, Mass.

Fire Drill Device

To the Editor:

Herewith is a picture of a device that is being put into use by this department among our five schools. This fire drill horse was made by myself and is lettered and painted the same on both sides.

This will be given to each school for one month during their school year to use in fire drill practice. School officials will place the horse at various exits to signify that exit is theoretically blocked by fire. Pupils and students upon encountering the horse will automatically

Chief Hersey and His Fire Drill Horse

alter their exit as instructed beforehand with the least confusion and in an orderly fashion.

The dimensions of the horse are twenty-two inches high and forty-eight inches over all length. A two by six inch piece was used for the top of the horse. Legs were made from one inch by four foot stock. The sign on the top is thirty-five by ten by one inch. Wood screws and nails are used throughout. The cost of materials was very small.

The fire department details men to help conduct the first drill in each school.

During these times of national defense we cannot do too much to encourage more and better fire drills in our school systems throughout our nation. We must protect our school children at any cost.

Yours very truly,
HAROLD A. HERSEY, Chief
Savanna, Ill., Fire Department

Preventing Fires During Harvest

To the Editor:

Herewith is a letter which we have mailed to 2500 farmers in Whitman County:

To: Whitman County Farmers

Harvest has already started, or is about to start, in every community in Whitman County. Growing conditions during the past season have been favorable not only for the grain crops in our fields, but for grass and weeds which may be surrounding our grain fields. This abundant growth makes the danger of loss from fire greater than it has been for many years.

Mr. L. L. Burgunder who has been appointed to serve as district supervisor for the fire department civilian training program under the emergency defense program, calls attention to the need for farmers to take all possible steps in preventing the loss of their crop by fire. The following steps will be helpful:

1. *Do not allow trucks in your field unless exhaust pipe is extended above cab and equipped with spark arrester.*
2. *Tractor and combine motors should be equipped with spark arresters.*
3. *Farmers should plow a fire guard immediately after hay is hauled or after the first round is taken with the combine.*
4. *Divide large fields to prevent spread of fire.*
5. *Have emergency fire fighting equipment on hand. This should include shovels, a small portable spray tank, or milk cans filled with water along with old sacks. A 50 gallon drum of water should be available in the field on a pickup or trailer.*
6. *Prohibit smoking on harvesting equipment, in the harvest field, and around warehouses.*
7. *Have plow in field available for use in case of emergency.*
8. *In case you see an unattended fire, phone the sheriff's office at Colfax.*

With the cooperation of every Whitman County resident we can bring this record wheat crop safely into port. Our nation may yet have need for it.

Anton F. Harms,
County Extension Agent.

I have five counties in my district, all of which are large wheat producers, so I have my hands full at harvest time.

CHIEF L. L. BURGUNDER,
COLFAX, WASH.

Training Auxiliaries

To the Editor:

We have organized an auxiliary firemen's brigade that we are very proud of. They drill two hours every two weeks. The Drill Master takes them through the various evolutions such as hose, ladder, tying knots and also the smoke mask test. When they have twenty hours of work, we present them with the arm insignia. These men will be of great help in case of an emergency.

Yours truly,
ALBERT LUEDEKE, Chief
Freeport, Ill.

Hose Bridge

To the Editor:

Herewith is a picture which is rather rare in fire fighting.

Quite a number of the large city departments have an evolution known as the hose bridge, but rarely is it ever put into practice.

This was used by the Teaneck Fire Department recently over a main highway and as you can see, traffic was not interrupted due to the fire.

Very truly yours,
F. A. MURRAY, Chief
Teaneck, N. J.

Method of Fighting Chimney Fires

To the Editor:

The Stoughton, Wis., Fire Department has experienced some success in taking care of chimney fires with ordinary firecrackers. Usually two or three firecrackers, placed in the ash drawer at ten second intervals, bring down the burning soot for removal in pails or tubs. The use of oil burners, however, seems to cut down the number of these alarms and a roofing ordinance we have had in force for several years, has reduced the danger to shingles.

GILES DOW, Chief
Stoughton, Wis., Fire Department.

What Mill Valley Is Doing for the War Emergency

To the Editor:

The City of Mill Valley, Cal., covers an area of ten square miles, but the defense area which has been set up under the control of this community covers an area of approximately fifty square miles. In this area there are seventeen districts and four unincorporated communities. The City of Mill Valley contains fourteen districts itself, all under the direct control of this department.

Some of the things which we have done so far to meet the present emergency are as follows: Over 300 auxiliary firemen have been trained; air raid sirens have been installed in the various communities; auxiliary fire stations have been organized and equipped with telephones, first aid equipment and fire fighting equipment. Over 500 auxiliaries have been given first aid instruction. We have installed blackout lights and screens on our apparatus and have purchased a reserve supply of 2½-inch hose.

With regard to the training of the auxiliary fire forces, we have employed many suggestions from the Board of Underwriters and books from the International Association of Fire Chiefs have been used for the basic training. All of the instruction has been given by the department officers and paid members, the latter having taken instructive training for the purpose of training these auxiliary firemen. We are also giving training to the women, who could be of valuable aid during the day when the

Hose Bridge Evolution Used in Teaneck

men are away at their jobs. Assistant Chief Leslie Aramger conducts the drill tower training and brush fire fighting instruction. Captain Don Hinz provides the lectures on incendiary bombs and war gas, this instruction having been received from army officers from the Edgewood Arsenal School.

Demolition and public works activities also have been placed under the supervision of this department.

As you no doubt will recall, Mill Valley is a very heavily wooded community and therefore is subject to a high fire hazard during the summer months. Consequently, we have cleared fire breaks and trails, using the services of over 300 auxiliary firemen.

Another very important item which we take care of is the instruction of the general public on what to do and what not to do in the event of an air raid. We have given many lectures and demonstrations throughout this area on the handling of incendiary bombs, and are conducting an intensive campaign on having homes put in order, such as clearing out attics, basements, etc. The air raid siren for blackouts is controlled from the fire station and literature on the subject is issued from the City Hall.

Mr. Relzy Aiken has been appointed Captain of the Auxiliary Fire Forces, and has personally organized all of the auxiliary and rescue crews.

Cordially yours,
D. L. Arnst, Chief
Mill Valley Fire Department

Auxiliary Firemen Put on Demonstration

To the Editor:

On May 22d, the Fire Service Division of the local Defense Council put on a public demonstration in Savanna's business district.

The regular firemen of this department, assisted by fifteen civilian auxiliary firemen, went through the various phases of fire fighting.

At 7:30 p. m. an alarm was received at Fire Headquarters and our 750-gallon pumper responded with three regular firemen and two civilian firemen. The call came in for the Western Auto Associate Store four blocks from the fire station. Upon arrival of our first piece of equipment, the Police Department closed the entire block to traffic and cars were removed to give us more working room.

Hose was laid, ladders set and the pumper was connected to the hydrant at the far corner of the block. Lines were advanced to the roof and tied in to the chimney. Equipment, such as an axe, pump tank, crow bar and pike pole, was raised to the roof by means of rope lines, demonstrating the auxiliaries' ability to tie the various fire department knots. He secured a public address system and a very capable announcer told the public what was taking place.

At 7:36 p. m. a second alarm was received at the fire station for life saving equipment. Our second alarm truck responded with an inhalator, splints, blankets, salvage covers and heat pads. Upon arrival a man, supposedly overcome by smoke at the mock fire, was carried across the street where first aid equipment was set into operation. Artificial respiration was given by firemen and first aiders, and splints were applied to a supposedly broken leg.

After the completion of the first aid demonstration, first aid leaflets were passed out by the Boy Scouts to all in the crowd.

At the mock fire, we had our auxiliary firemen show how hose was drained to street and then lowered by means of rope lines and a running bowline knot. As this was going on, our three-way high pressure nozzle was being hooked up on a side street. This was later put into operation with three lines on it. Boy Scouts in the meantime passed out fire prevention literature to all present.

I have been appointed as County Chairman on Fire Defense and expect to hold demonstrations on fighting incendiary bombs throughout the cities in Carroll County this fall.

Very truly yours,
Harold A. Hersey, Chief
Savanna, Ill., Fire Department

The Aliquippa Fire Department

The Fire Department of the Borough of Aliquippa, probably one of the best equipped departments in Pennsylvania, proves its dollar and cents value by boasting of the community's fire insurance rates which are among the lowest for any town of its size in the nation.

Protecting about 30,000 persons from fire, the Department consists of eleven paid firemen and ninety volunteers, who receive $1.00 an hour when working. There are three stations.

Central station holds the following apparatus: a 65-foot aerial truck purchased this year, which has hydraulic operation and which is equipped with 220 feet of hand ladders, 100-gallon booster tank, floodlights, life net, fire escapes, 600 feet of 2½-inch hose and two one-hour smoke masks; a 750-gallon pumper equipped with a 100-gallon booster tank, 1,200 feet of fire hose and an Indian pump, also bought this year; a 1,000-gallon pumper equipped with 100-gallon booster and carrying 1,200 feet of fire hose and a foam generator, purchased in 1936; a chief's coupe equipped with Indian pumps, purchased in 1937. The station is equipped with an iron lung and oxygen tents.

No. 2 Station has a 750-gallon pumper and 200-gallon booster tank, equipped with 1,200 feet of fire hose and three Indian pumps. This unit was purchased in 1942.

No. 1 Station has a 500-gallon pumper, equipped with a 140-gallon booster tank, 1,200 feet of fire hose. This unit was purchased in 1928.

One pumper has been in service for twenty-five years and is still in operation at one of the stations.

The present chief, the third since the department was organized in 1910, is the veteran firefighter, August Thomas, who joined the force on May 2, 1922. Five years later he became captain and in 1940 was named chief. Dedicated to the further reduction of fire damage and a campaign for prevention of fires, Chief Thomas rates the department the most important single factor of safety and welfare to his industrial community.

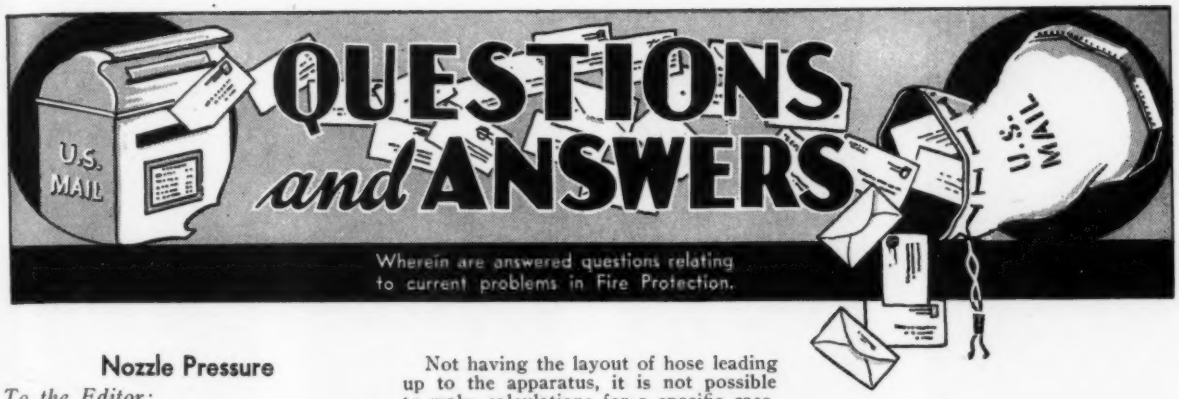
Weaver Appointed County Fire Warden

Harry J. Weaver, who is serving his eighth year as Fire Chief of Whitehall Township, Lehigh County, Pa., has been appointed County Fire Warden of Lehigh County. He is in charge of all auxiliary fire training within the county, with the exception of the City of Allentown, which is under the supervision of Chief Clarence Marcks. The county has been divided into four zones, an assistant having charge of each zone. The training course consists of ten hours of first aid and twenty hours of fire fighting and its fundamentals. Recently 1100 fire fighters completed this course and received their arm bands and certificates.

Davis Chief at Dutch Harbor

Harold Joe Davis, former safety engineer, Tulsa, Okla., has been appointed Chief of the Fire Department at the United States Naval Air Station at Dutch Harbor, Alaska.

Members of the Aliquippa Fire Department



Nozzle Pressure

To the Editor:

We have recently put into service a 65-foot hydraulic aerial ladder equipped with a ladder pipe, three-inch hose and siamese. Tips are 1⅜, 1⅝ and 1½ inch. The ladder pipe is fastened at the top of the bottom section of the ladder. What nozzle pressure would be most suitable for the 1⅜ inch tip?

I believe 90 pounds nozzle pressure would be suitable for any use in our town. We don't have but three buildings that are more than three stories high and none over four stories.

If 90 pounds nozzle pressure is correct for the ladder pipe, how should this be figured?

J. O. C.

Answer: Nozzle pressures of 40 to 60 pounds are satisfactory for nozzles from 1⅛ to 1¼-inch inclusive.

With 1½-inch and larger nozzles, 60 to 90 pounds pressure is considered effective. Of course, with the larger size nozzle, it is necessary to have a firm support for the nozzles, for the streams they give are too heavy to be handled by hand.

For 1⅜-inch nozzle, used on a deck gun, 60 pounds would be as much as would be required for normal fire fighting operations. The effective horizontal reach of such stream would be about 77 feet. If the pressure were stepped up to 90 pounds, the effective horizontal reach would be 90 feet, or 13 feet more than with 60 pounds pressure.

In solving problems involving ladder pipes, it is the usual practice to first solve the problem as consisting of a horizontal line of hose equipped with the given size nozzle. After the engine pressure or nozzle pressure has been secured, then a correction must be made to take care of friction loss in the riser, and back pressure in the line leading to the nozzle. In the case of a 65-foot ladder, on the lower section of which is placed the ladder pipe, the elevation of the nozzle would be approximately 44 feet above the ground. A back pressure of 44 × .434 pounds would have to be allowed. If we are solving for engine pressure, this pressure would be added to the calculated engine pressure, as would also 15 pounds for friction loss in the line leading to the nozzle.

If nozzle pressure were being calculated, the back pressure and friction loss of 15 pounds would be subtracted from the given engine pressure before calculations are made.

Not having the layout of hose leading up to the apparatus, it is not possible to make calculations for a specific case.

Relaying Water

To the Editor:

In a short time we will be asked to relay water from a fire hydrant to a section approximately 2,000 feet away. We will use two 2½-inch butts, with 75 pounds pressure. We have a 5,000,000 gallon supply. We have a 400-gallon rotary pump and a 600 gallon centrifugal pump in our department and use 2½-inch double jacket rubber lined hose.

What would be your suggestions for a layout whereby the most water could be delivered to the indicated section?

H. H. K.

Answer: In the layout, we have placed the more flexible pump, the centrifugal, at the source of supply. Assuming that the pumps are to be operated at capacity, which is 125 pounds pump pressure, and further assuming that the flowing pressure at the hydrant will be 50 pounds rather than the static pressure, 75 pounds, our calculations are as follows:

Allowing 10 pounds entrance pressure to the 400 gallon pump, we would have available at the first pump for overcoming friction loss, 170—10, or 160 pounds.

Assume further that a delivered pressure at the open butt of 25 pounds would be required for elevation, etc. No mention is made of fire discharge so we are not allowing for any fire pressure at nozzle.

Under this assumption, the pressure available from the second pumper, the 400-gallon one, to overcome friction loss would be 120—25, or 95 pounds.

Thus we will have available a total of 95+160, or 255 pounds for overcoming friction loss in the 2,000-foot line of hose.

This will give us 255÷20, or 12.75 pounds friction loss per 100 feet of length.

The flow Q_1 (in hundreds of gallons)

$$=\tfrac{1}{2}\sqrt{2FL}-0.25$$
$$=\tfrac{1}{2}\sqrt{25.50}-0.25$$
$$=\tfrac{1}{2}\times 5.05-0.25$$
$$=2.525-.25=2.275,$$ which is

the flow in hundreds of gallons per minute.

The flow will therefore be 227.5 gallons per minute from the open butt.

And now as to the placement of the two lines:

As the first engine has 160 pounds pressure available to overcome friction loss, the line will be 160÷12.75, or 12.55 in hundreds of feet in length, or 1,255 feet. The nearest stretch to this will be 1,250 feet, as the hose comes in fifty-foot lengths.

The line from the second engine to the nozzle will be equal to 95÷12.75= 7.45×100=745, or 750 feet in length.

Formula for Friction Loss

To the Editor:

On Page 299 of the May issue of FIRE ENGINEERING there is a problem dealing with friction loss.

The formula used to obtain the friction loss is $2 \times Q \times Q + \frac{1}{2}Q$, while on Page 82 of "Fire Service Hydraulics, the formula is given as $2 \times Q \times Q + Q$. Please advise me which of the two is correct.

A. J. R.

Answer: The formula for friction loss in 100 feet of 2½-inch hose carrying less than 100 gallons of water per minute is as follows:

F. L. $= 2Q \times Q + \frac{1}{2}Q$

Where the flow is 100 gallons a minute or more, then the friction loss per 100 feet of 2½-inch hose is:

F. L. $= 2Q \times Q + Q$

Notice that for flows of under 100 gallons per minute ½Q is used as the last figure in the formula while for flows of 100 gallons per minute or over, Q is the final figure.

Hazards of Oil-Treated Stoker Coal

To the Editor:

What is the fire hazard of oil-treated stoker coal stored in a dwelling?

B. E. C.

Answer: The use of oil-treated coal lessens the fire hazard rather than increases it.

Mineral oil, with which coal is treated, is not subject to spontaneous ignition. At the same time, it seals the pores of the coal and thus has a tendency to reduce the danger of spontaneous ignition.

If plain coal has been used in the past, no increased hazard should be brought about by the employment of oil-treated stoker coal.

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DIRECTOR AND OFFICERS OF DIVISIONAL ASSOCIATIONS, I. A. F. C.

Our inquiring reporter overhauls the firemanic news of the day

Beware the Fourth

The arrival of the Fourth of July reminds us of the events that took place a year or so ago in three Delaware County Communities on that Holiday—Marking two deaths, a fire and call for an ambulance.

In Collingsdale (Pa.) apparatus was out of quarters in a parade when an auto burst into flames right across the street from the empty firehouse. Firemen hastily summoned from nearby Darby (Pa.) prevented extension of the fire.

At same time, the community ambulance left the parade to rush a sick woman to the hospital, while Joseph Mallory, 42, dropped dead of a heart attack, while watching his son parade.

In another Holiday parade, Edward Moore, police radio man of Sharon (Pa.) died after fellow policemen marched past his home where he had been ill.

* * *

Fire Alarm Box Goes Haywire

Here's story of how a man turned in a "false alarm" and got consideration instead of curses from the fire laddies.

Martin Lawless, Roxbury, (Mass.) was watching workmen resurface Tremont Street when a gasoline road-roller knocked over a fire alarm box which struck Lawless on the shoulder and he and the box "took the count". Firemen summoned by the accidental alarm transmission, when the box collapsed, offered medical help to Lawless who said he preferred his own physician—and beat it.

* * *

Cool Customer

Down in Brooksville (Fla.) W. P. Tucker reclined in a barber's chair luxuriating in a shave when suddenly his barber left in a hurry and a cloud of smoke. Un Huh,—the shop was on fire!

But cool-customer-Tucker stuck to his chair, even while the firemen arrived and went to work on the blaze—with himself right in the middle of it.

The fire out—the barber returned and "C. C." Tucker persuaded him to finish up his job of barbering before trying to set the smashed-up shop to rights.

* * *

Trials of the Dispatcher

Chief C. E. Underwood of Manistee (Mich.) tells us one about the excited lady who reported a fire by telephone at 2.45 in the morning. The operator taking the call *thought* she said *"fire at 111 No. Houghton"*, but to be sure he asked her to repeat the number and give her name. She replied *"I haven't time—I've got to get out right now!"*

Luckily the operator had the number right—and the F.D. found the fire.

* * *

From Out Illinois Way

Here are some news tidbits from a mid-west reader of this column who prefers to remain anonymous.

At 2 A.M. the fire alarm sounded in a Midwestern city served by a well equipped and active volunteer department. The fire lads responded with promptness that would put a paid department to shame. Citizens just couldn't understand how the boys got out so quickly at that time of night. Some even had on their ties.—Don't tell anybody, but truth is, the boys were enjoying their monthly poker game and the driver, whose luck had been none too good, was dozing in the seat of the truck when the alarm was received. The lads didn't have to dress but they did take time to scoop up their dough—what was left.

* * *

Believe it or not—there is one Illinois town that for a long time drove its fire truck into the station head first—and there was no rear door. Report hath it that now the old truck is properly parked, ready to make a head-first exit.

* * *

Another town with a four tank soda and acid truck does not charge the tanks in the winter for fear they will freeze.

* * *

Newspaper reports that Peoria, Illinois, firemen made the 52 mile run to help Kewanee battle a $2,500,000 blaze in 53 minutes were very flattering to the Peoria Brothers, even if untrue, says our reporter.

* * *

Tragedy

When a high pressure stream got out of control during a testing of a new fire truck in Vandalia (Ill.) the wildly gyrating nozzle struck Vol. fireman Oscar Blom, 30, caused injuries from which he died. W. T. Dewald 40, standing five feet away was also hit and lost an eye as well as suffering severe facial lacerations.

* * *

Bang Goes a Chemical!

Brother Hardy, Baltimore fan and newsclipper, who recently crashed this column, comes across with another quotable item.

This is all about Baltimore Brothers who were called as result of three alarms turned in for a 100-acre field fire which threatened serious destruction just outside the city limits.

Seems that No. 3 Chemical Truck en route to the scene "exploded on Pennington Ave. and Locust Street, endangering the lives of firemen John Rudolph and Paul Chalion. They dodged as the blast sent bits of the "engine top" close to their heads (and who wouldn't). The truck was *hors de combat*.

Says contrib' Hardy: "I've known the old 'smoke stacks' to 'let loose' on the job pumping, but this is the first instance I've ever known of a rig 'going off' on the way to a fire".

* * *

Fire Chases Man!

Harry Moore of Philadelphia (Pa.) broke the spring records running away from fire which was racing up a trail of gasoline which was dripping from a can Moore was carrying through his brother's shop. Moore had started a gasoline stove to boil some water; stove flared up as he walked away. He hopped out of the way and then tried to beat out fire—but no soap. Grabbing the fuel can Moore raced through the shop, pursued by flames. While Moore sprinted somebody called the Brothers but by time they arrived, fire was through the roof of the one-story building.

Our contrib', Ed Spranger, failed to report on the finish of Moore's race with the flames.

* * *

A True "Fish Story"

Here's a delayed item from Henry Gerke, of the North White Plains Fire Company which we print just as we received it:

"Some weeks ago our Engine Co. was requested by the owner of a nearby estate to evacuate a small pond which he was unable to empty because of a clogged drainpipe.

Accordingly on a bright and Sunny Sunday morning we rolled up to the pond and commenced operations. Some difficulty was experienced at first due to the shallowness of the water and the resultant tendency to draw muck into the pump. We overcame this by floating the screened end of the suction hose in a wooden crate. Fore some time thereafter all went well and the pond emptied rapidly. Then we noticed that the outlet streams, some distance away, had decreased to a mere trickle. Examination showed that the coarse screen on the end of the suction line was completely closed by a mass of small trout, sunfish, etc. When these were removed and the screen kept continually clear water again spouted from the exhaust line. By this time the water was very low and literally boiling with the movements of hundreds of small fish.

Gradually, however, even with the screen kept clear the outlet streams died away. Many reasons were advanced and ideas tried to solve the puzzle with no results. Finally the writer remembered reading about the small mesh screen at the pump intake and suggested removing the suction hose to examine same.

Talk about sardines packed in a can. The inner conical screen was jammed full of small fish.

Too bad the owner had seined all the larger fish out of the pond before we arrived on the scene. However, we think this method of fishing is novel and we're going to donate the idea to Rube Goldberg."

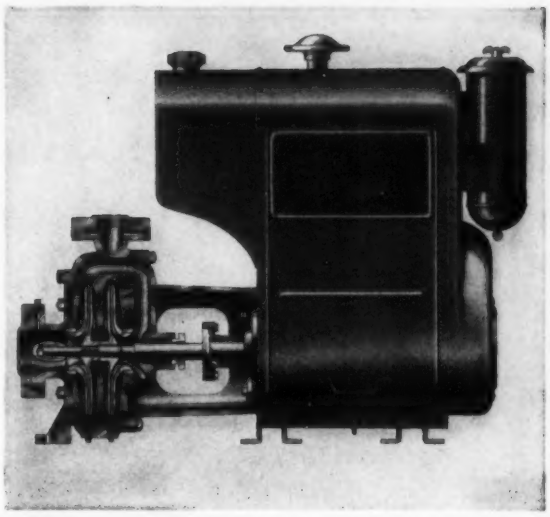
BERKELEY PORTABLE FIRE PUMPS ARE

ON THE JOB.... ON ALL FRONTS

Berkeley engine-driven centrifugal pumps, operating at pressures up to 400 pounds, provide low-cost protection for docks, air bases, warehouses, war production plants, forests and homes.

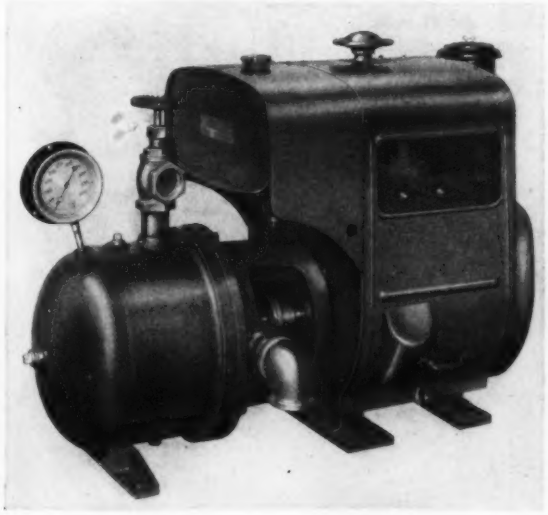
Three different models—one, two, and four stage pumpers—are engineered to produce the pressures and volume needed for all types of fire fighting.

The trend today is toward the centrifugal fire pump because of its greater durability. It handles muddy water in an emergency without failure, and worn parts are easily replaced. Send for free illustrated catalog and performance charts on Berkeley pumps today.



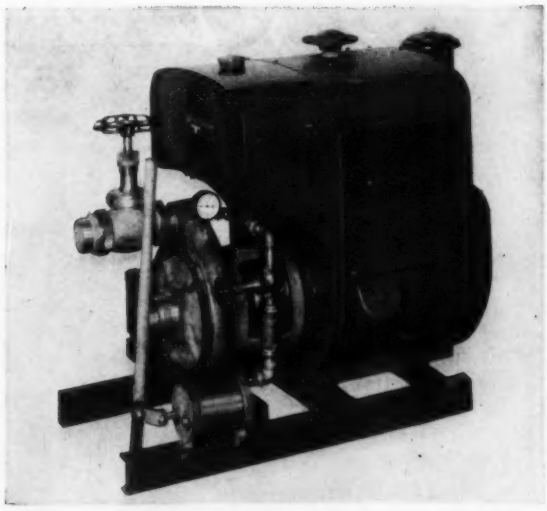
THE PLAINSMAN

Two-inch, two-stage centrifugal pumps powered by VE-4 Wisconsin air-cooled engines. Ideal for tank trucks for protection of air ports, factories, etc., where variable capacity and high pressure are needed. Handles two 1½″ hoses with ½″ tips. Ample pressure for fog nozzles. Supplies 120 GPM at 140 pounds per square inch, 40 GPM at 200 PSI. 42″ overall length.

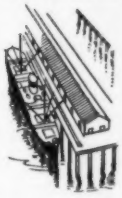


THE FORESTER

A 2½″ four-stage pumper that really builds up pressure. Handles one to four hose lines without need of relief valve. Supplies long lines at high elevations, for fighting fires in forests or taller buildings. Powered by a Wisconsin VF-4. Produces 60 GPM at 250 PSI, 20 GPM at 400 PSI. Handles muddy water without breakdown; parts easily and inexpensively replaced.



THE GUARDSMAN



A 2½″ single stage centrifugal pump, driven by a Wisconsin VE-4 air-cooled engine. An ideal unit for water-front fire fighting. Because it is compact and light weight, it can be economically supplied in bronze for handling salt water. Install on small boats to convert them into fire fighters. Will handle one 2½″ hose, supply 160 GPM at 100 pounds per square inch.

BERKELEY FIRE FIGHTING PUMPS

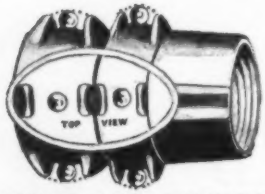
BERKELEY PUMP CORPORATION • 829 BANCROFT WAY • BERKELEY, CALIFORNIA

HOSE BRASS GOODS
WB LINE
THE WOOSTER BRASS Co.
WOOSTER, OHIO

ADEQUATE FIRE DEFENSE

ASSURES LESS DESTRUCTION

SAVE WITH SAFETY



GUARD LUG COUPLING
APPROVED BY FEDERAL GOVERNMENT

BEST FOR LESS

Our pledge is to serve you better than ever before, and we should, with an organization of men having nearly forty years of experience developing and making fire fighting appliances.

FIRE-MIST NOZZLE

WHEN YOU SPECIFY PRODUCTS BEARING OUR TRUMPET TRADE MARK

YOU CAN SAVE AND BANK ON SAFETY

★

We regret the necessity for I.A.F.C. calling off this year's Convention, for these personal meetings with you have been of great educational value to us. These conversations we have had with you in the past, and the discussions of your problems have had a great effect on the improvement of the products we make.

CUSHION-BALL Shut-off

PARTIAL LIST OF MANY ITEMS WE MAKE

Hose Couplings
Nozzles
Play Pipes
Spanners
Ladder Hooks
Mending Sleeves
Expanders
Expansion Rings and Gaskets
Hydrant Pumps

K. E. REARICK
Sales Manager

J. C. SCHELLIN
President

E. J. HOUSEKEEPER
Plant Manager

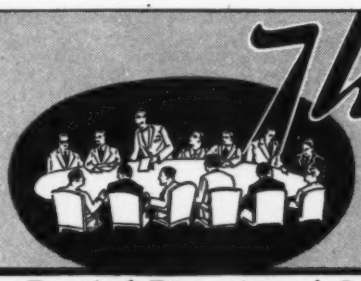
PARTIAL LIST OF MANY ITEMS WE MAKE

Hose Testing Units
Siamese
Water Thieves
Valves, Gate
Adapters
Reducers
Hydrant Connections

★ Some of the members of our administrative staff contacting fire engineers and the trade generally—you have met them many times. After "licking" our enemies, assuring our freedom, we hope to meet you at the next convention with a great big smile of victory. ★

The WOOSTER BRASS COMPANY

WOOSTER, OHIO



The ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

RESPONDING TO OUT-OF-TOWN RUNS

IN these war days when suburbs are expanding far beyond the power of the rural fire departments to protect them from fire, the burden of so doing is placed upon the fire departments of large neighboring cities.

How fire departments of cities throughout the country are meeting this problem of furnishing additional fire protection, and the resultant costs, is outlined in the following discussion.

Because of the many replies received, the discussion will be continued in the August issue of FIRE ENGINEERING.

Readers are invited to send their comments on this subject for inclusion in the discussion. Address communications to Round Table Editor, FIRE ENGINEERING, 24 West 40 Street, New York, N. Y.

HERE IS THE PROBLEM

Do you charge for out-of-town runs by your department?

If so, what is your schedule of charges?

Is any insurance provided for the men leaving the city to operate on out-of-town fires?

If so, how much protection per man?

If no insurance is provided, who pays hospital costs, etc., of men injured while out of town on fire department duty?

Discussion of the Subject

Thomas H. Cotter, Chief, Providence, R. I.: This department makes no charge for out-of-town assistance.

We have no provision for insuring our men against injury on such detail.

While we have no record of any member being injured while performing out-of-town fire duty, we would naturally expect the town in question to accept the responsibility of cost of hospitalization, etc.

John W. Cole, Chief, Silver Spring, Md.: This Fire Department is supported by County Fire Tax Area and from County Tax Funds. All of the departments in the county receive tax funds for the number of pieces of fire apparatus. Some of the larger fire departments, such as Silver Spring, have a special fire tax levied by the county commissioners for the support of individual companies.

We do not have the out-of-town problem such as a large incorporated city.

Our firemen are protected at all times by the Maryland State Association of Firemen and the Volunteers' Group Insurance.

A. F. Taylor, Chief, Richmond, Va.: We charge for all county runs. The charge is $75.00 for the first hour and $50.00 for each hour thereafter.

There is no insurance on the men, but the apparatus is insured.

In case of accident, the city has in the past assumed all expense. We have an agreement with the two adjoining counties reserving the right to refuse fire protection of any kind, if we deem conditions in the city would be put at a hazard if we sent apparatus to the county. Also under the agreement, we bill the county authorities for the amount due and not the individual. We do not have any separate agreement with the individual or corporation other than the above.

M. W. Lawton, Chief, Middletown, Conn.: We go out of town whenever called upon for assistance, but we make no charge. We have a Mutual Aid Association in the county.

Insurance is provided for the men at all fires.

Each man is given full pay. In addition, the city provides insurance that pays each man $20.00 per week. In addition to this also $2.00 a day is paid by the State Firemen's Association. The city also pays all hospital and doctor's bills, as well as the cost of medicine.

Edward H. Siller, Chief, Yonkers, N. Y.: As we are located in Westchester County and members of the Westchester County Fire Chiefs' Emergency Plan, we respond to any call for assistance assigned to us or requested by a neighboring chief.

As members of a fully paid department, all responsibility for hospital costs, etc., rests upon the City of Yonkers for any injuries received in the line of duty.

N. Taupier, Chief, Pawtucket, R. I.: We do not charge for out-of-town runs.

The men of this department are covered by benefits from the Pawtucket Firemen's Relief Association if injured at fires, either in their own city or out of town.

Members injured at fires are paid $1.50 a day while off duty and all bills contracted are paid for by the Association. This is in addition to their receiving regular pay from the city. The State Firemen's Relief Fund also pays a man $1.50 per day for sixty days, if he receives regular pay. This time can be extended if circumstances warrant same.

C. N. Lavery, Chief, Burlington, Vt.: We charge $50.00 for the first hour or part of an hour and $10.00 per hour or part of an hour from then on. We also charge for gasoline and oil.

There is no insurance provided other than the regular compensation provided by the City of Burlington for the regular firemen.

The firemen here receive full pay while off duty, but the city is reimbursed up to fifty per cent in compensation by the insurance company.

The insurance company and also the Firemen's Relief Fund is often called upon after the compensation is used up.

S. T. Porter, Chief Engineer, Washington, D. C.: We do not charge for out-of-town runs.

Whenever any member of the Fire Department of the District of Columbia shall become temporarily disabled by injury received or disease contracted in the actual discharge of his duty, to such an extent as to require medical or surgical services other than such as can be rendered by the Board of Police and Fire Surgeons of said District, or to require hospital treatment, the expense of such medical or surgical services or hospital treatment shall be paid from the Policemen and Firemen's Relief Fund, District of Columbia.

E. T. Rose, Chief, Wheeling, W. Va.: As the City of Wheeling is the shopping center of all the surrounding towns, we feel that a loss by fire in any of them would be felt by us. We make every effort to give them assistance whenever they need it without charge.

Our firemen are covered by state compensation should they be injured in the line of duty.

J. H. O'Neill, Chief, Niagara Falls, N. Y.: No charge is made for calls of apparatus outside the city. Members of the Department injured in performance of duty outside of the city receive hospitalization and full pay while off duty.

Burr Hamilton, Chief, Marion, Ind. We do not charge for out-of-town runs. By not charging it does not obligate us to make these runs when the conditions are not favorable.

No insurance is provided for the men on out-of-town runs. It is a matter of the men voluntarily answering these alarms. In case of accident he is protected by the pension.

The state law protects the men in case of injury when fighting fires and does not specify where they may be injured in the city or rural districts.

E. F. Reed, Chief, Middletown, Ohio: We charge $100.00 per run for the first two hours and $25.00 per hour for each additional hour.

The men are covered by pension rules in the same manner as they are when injured on duty in the city.

Each of our men, or most of them, carry hospital insurance. They are covered for this hospital service by pension or state compensation according to circumstances.

Harry E. Miller, Chief, Lancaster, Pa.: We do not charge for out-of-town runs.

The city carries insurance and when a man is injured, he receives compensation under the state laws. The man receives a certain amount from the insurance company and the city makes up the difference. The man receives his full salary until he returns to work.

James C. McAllister, Chief, McKeesport, Pa.: We answer all calls to surrounding communities without charge.

All the men are under the state law which provides full pay for time lost due to injuries at fires. We also have our own compensation fund in the city which takes care of all hospitalization.

E. L. Clark, Chief, Elkhart, Ind.: We do not make out of city runs. We expect to enter into a contract with two townships, of which the city forms a part, wherein this Department will charge $4,000.00 a year according to the assessed valuation, to maintain an extra pumper for answering county calls.

The pumper will be manned by our regular men. The city will not carry insurance, but as it is receiving a regular fee, it will pay all hospital costs and carry the men on our regular system.

Out-of-town calls will be considered just the same as city calls. We will limit these calls to one engine with a two-man crew.

Frank W. Bennett, Chief, Durham, N. C.: We have an agreement with two communities outside the city limits and one industrial plant. There is a charge of fifty dollars for this service. The above mentioned also have hydrant protection. The City of Durham takes care of the men injured in responding to such calls.

THIS DISCUSSION WILL BE CONTINUED

Due to the large number of Chiefs who contributed their experiences, the discussion on this subject will be continued in the next issue.

Charles DeVleeschower, Chief, South Bend, Ind.: We charge $50.00 for each piece of apparatus for the first hour and $25.00 for each piece for the second hour.

We cover seven townships and each township provides a bond of $5,000.00 for the men on the equipment.

A state law provides that any city that maintains a paid fire department shall pay for the care of firemen who suffer an injury while performing their duty or who contract illness or disease while performing their duty, such expenditure to be paid from the general fund of any such city.

Ben J. Zahn, Chief, Ann Arbor, Mich.: Up until three years ago we used to go outside of the city limits at the request of anyone who had previously signed a contract to the effect that they were willing to pay $50.00 for the first hour or any part of it, and $25.00 for each additional hour the department worked.

We had been using this plan for a number of years, but as time went on, the subscribers became so numerous that the city fathers decided that these people were receiving a service which they did not help to maintain. They paid only when and if they needed service. The City Council unanimously voted to discontinue any further calls outside of the city. When we did go, our men were not protected against injury. This was one of the bad features of the service.

Edward J. Green, Chief, Steuvenville, Ohio: We charge $50.00 for each auto and $100.00 for each company that responds to a fire outside the city limits. Property owners can take out an extra $100.00 for insurance at the same rate they pay for property coverage. This is paid to the fire department should a fire occur. Township trustees can make contracts with the fire department at a fixed sum for the year.

The men come under state compensation if injured while responding to an out-of-town fire.

G. R. McAlpine, Chief, Oklahoma City, Okla.: We do charge for out-of-city fire response. The schedule of pay is based on the rate of $50.00 per hour per piece of apparatus responding.

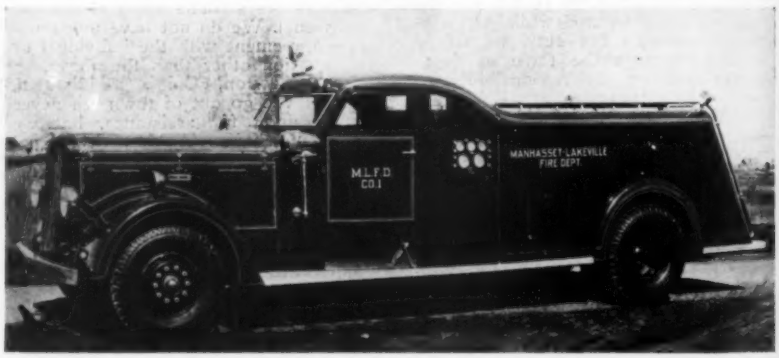
No insurance is provided for men while on out-of-city response. We have a state law that makes this function a governmental operation, and the State Firemen's Pension applies in case of injury.

W. H. Palmer, Chief, Charlotte, N. C.: We have a state law which protects the firemen in case where there is a contract drawn up between cities and counties for this service. We have a contract with Mecklenburg County of which the City of Charlotte is the county seat. Our charges are $1500.00 per year as a stand-by charge and then on every run out in the county the charge is as follows: For each truck and crew we charge $4.75 per hour and $3.00 per hour for the use of the pump. And in addition, thirty-five cents per mile.

There is a proviso in the contract that the Chief of Fire Department has the right to refuse to go on calls outside of the city when in his opinion it jeopardizes the interests of the city.

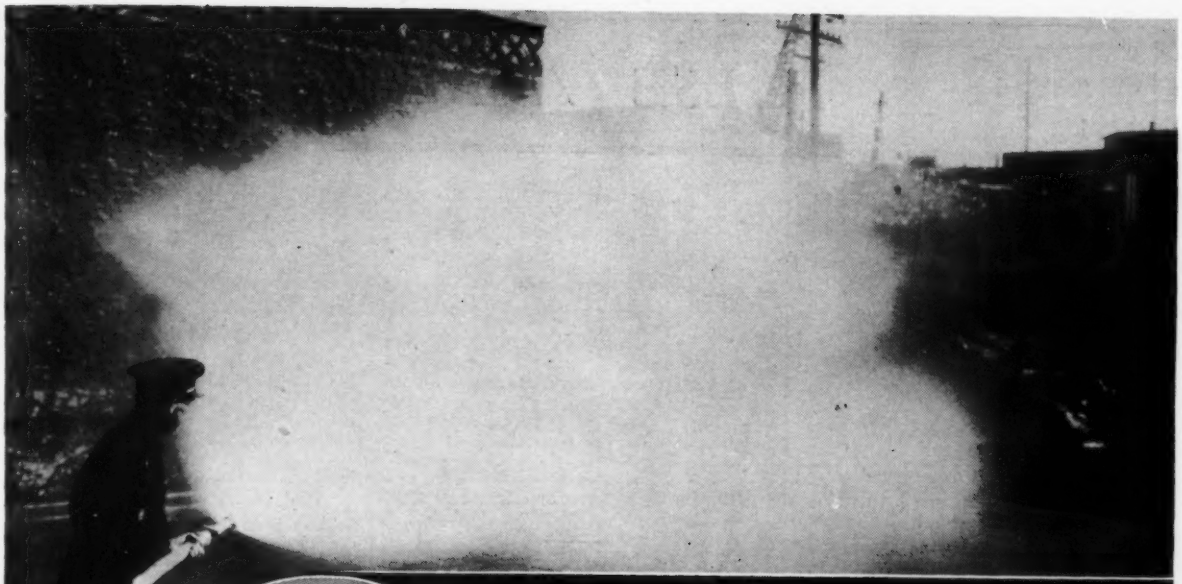
M. G. Bennett, Chief, Orlando, Fla.: The Orlando Fire Department does not make any charge for out-of-town runs and neither does the city. We do not go out of the city for grass or brush fires. We only respond to fires in residences, and then not if we are needed in the city at the time of the call. We go any place at any time where we can be of assistance to anyone in need. We will also go to other cities if we are needed. Of course,

(*Continued on page* 475)



Manhasset-Lakeville Has Modern Pumper

A new 1000-gallon pumper is now in service in the Manhasset-Lakeville Water District, Manhasset, N. Y. It was built by Ward-LaFrance Truck Corporation of Elmira, N. Y. The engine, of six cylinders, has a horsepower of 235 at 1800 R.P.M. Torque is 925 pounds. Bore and stroke are 6¼x6¼ inches. The pump is a two-stage centrifugal fully enclosed with a six-inch suction. In addition, the truck has a four-man steel cab equipped with a deep storage-well above the pump behind the driver's seat. It has a hose body ninety inches wide.



PUT OUT FIRES FASTER, SAFER

with this amazing, new all-purpose nozzle!

STRAIGHT STREAM

NARROW FOG PATTERN—GREAT PROJECTION

WIDE PATTERN FOR PROTECTION

Four variable fog patterns—plus straight stream—enable the new Aqua-Gas nozzle to extinguish nearly any type of fire with greater efficiency and safety . . . and with an absolute minimum of water damage. Dense three-dimensional fog patterns without voids or hollow cones: heat absorption factors up to 375,000 BTU smother flames, dispel smoke, and remove noxious fumes.

Aqua-Gas nozzles, operating at from 10 to 50 GPM, conserve water, and are ideal for use with portable equipment. Fog is safe against electrical and oil fires. Straight stream tip sizes—from ⅛″ to ½″—are quickly interchangeable. At 30-degree angle, straight stream carries 80 feet using ⅜″ tip on 1½″ nozzle. Mail coupon below for FREE catalog.

Aqua-Gas NOZZLES

FIRE APPLIANCE COMPANY

926 HOWARD STREET, SAN FRANCISCO, CALIF.

SEND FOR THIS FREE BULLETIN!

GENTLEMEN: *Please send me your free illustrated bulletin on the new Aqua-Gas all-purpose nozzle.*

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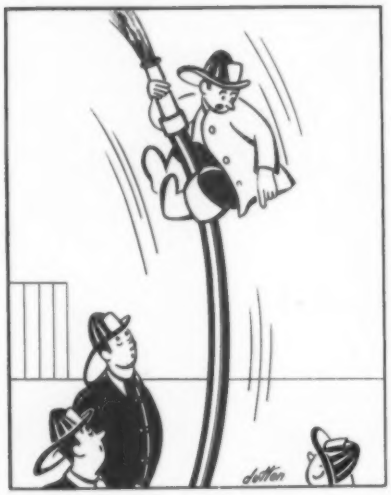
City_____ State_____ FE7 2

FALSE ALARMS



"Now this is too much pressure. . . . See what I mean?"

Raised-Eyebrow Dept.

—and then there's the Scotchman who took his girl to the beach and told her shady stories so he wouldn't have to rent an umbrella.

Naturally

A new fireman was frequently late, and always had a different excuse. Arriving an hour late one morning, he was greeted by the Captain with: "Well, Brown, what's your story this time?"

"Well, sir," was the reply, "my daughters were afraid of the storm last night and turned the mirror on the mantlepiece round to the wall. When I came downstairs this morning I couldn't see myself in the looking-glass, and, naturally, I thought I'd gone to work!"

Sure Test

"Halt; who goes there?"

"American."

"Advance and recite the second verse of 'The Star-Spangled Banner'."

"I don't know it."

"Proceed, American!"

Disgusted

"When you jump," said the officer to the parachutist about to make his first leap, "count to 10 and pull the rip cord. If nothing happens, count 10 more and pull the second rip cord. When you get down, a truck will be waiting to take you back to camp."

The rookie jumped out of the plane, counted to 10, pulled the first cord. Nothing happened. He counted to 10 once more, pulled the second cord. Again nothing happened. Said he, in disgust: "Phooey. I'll bet that truck won't even be down there and I'll have to walk back to camp."

The old saying that when the cat's away the mice will play is probably true. But maybe the cat ain't having such a bum time.

Eligible

An Australian tried to enlist, but was refused because of bad feet. Next morning he presented himself again before the doctor.

"It's no use, I can't take you, as you couldn't stand the marching," said the medico. "But why are you so insistent?"

"Well, Doc," said the man. "I walked 187 miles to get here, and I hate to walk back."

Gunner

"So your husband's in the Army now, Mrs. Worritt?"

"Yes, they've made him a gunner, an' that's what he's been ever since I married him!"

"Always been a gunner?"

"Yes, ever since I knew him he's been 'gunner do this' an' 'gunner do that,' but he never did anything worth while!"

British Humor

An old salt was standing at the bar, telling the tale to the visitors. "Yes," he said, "and there we was, thirty men and one pretty girl wrecked on this 'ere desert island for two weeks." "By Jove, was she chaste?" remarked one of the listeners. "Blime guvner, not 'arf, all over the blue pencil island," was the reply.

Expectant

Her: "Darling, do you know that soon there will be three sharing our little love-nest?"

Him: "No, honey, are you sure?"

Her: "Positively. I had a letter from mother just this afternoon and she is coming to live with us next week."

Captain: "The only difference between you and a horse is that a horse wears a collar."

Fireman: "But I wear a collar, too."

Captain: "Then I was wrong, there isn't any difference at all."

"I've been misbehaving lately and my conscience is troubling me."

"I see and since I'm a psychiatrist you want something to strengthen your will power?"

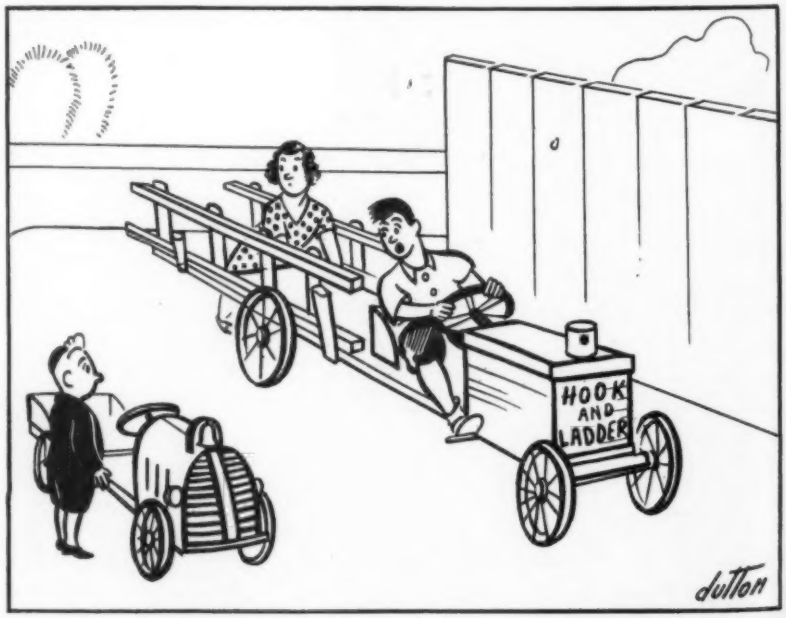
"No, something to weaken my conscience."

Stingy

The stingiest man we ever heard of bought his bride a nickel's worth of peppermint lozenges and took her on a trolley-ride honeymoon. When they got off the car he said, "Honey suppose we save the rest of this candy for the children."

Timmmm-Berrrrr!

Little Miss Muffet decided to rough it
In a cabin quite old and medieval;
A viper espied her and plied her with cider—
And now she's the forest's prime evil!

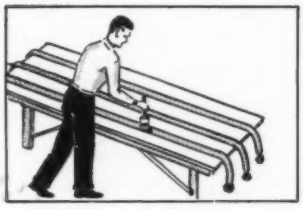


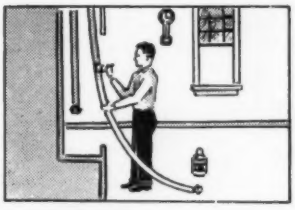
"O. K., you be the Fire Auxiliary Corps. We'll call you when we need you!"

Rubber and Canvas are Critical Materials!

PRESERVE WITH

Prolongs the life of
FIRE HOSE and SALVAGE COVERS
Makes your present supply
Mildewproof—Waterproof
Just Paint, Brush (Push Broom) or Spray—It's easy to use





Place on Tables—Floors or Hang in Towers

The fabric covering of FIRE HOSE and the fibre of SALVAGE COVERS are treated when new to prevent mildew and water penetration. Through weathering action, dust and usage, these properties eventually are lost. Deterioration of hose and salvage covers causes them to rip and tear easily because the cotton fibres have become rotted and lost their strength.

CANVEX is an easily applied solution which penetrates the fibres of the fabric, again making them MILDEWPROOF and WATERPROOF.

Unlike paint which hardens and cracks CANVEX leaves the fabric as soft and pliable as before treatment. It cannot harm the hose.

COST IS LOW

It is the patriotic duty of every Fire Department to prolong the life of their present supply of Fire Hose and Salvage Covers. CANVEX makes this possible. Savings effected many times repay its nominal cost.

Keep your present supply mildewproofed and waterproofed by using CANVEX.

Send for special circular and price schedule. Specify footage to be treated.

★ *Inquiries from established Distributors Solicited*

Manufactured by

SOILICIDE LABORATORIES

MONTCLAIR, N. J.

SAFE!

With BUCKEYE fire fighting equipment

In these strenuous times it is tremendously important to beat out all the "close ones," and be *safe*.

Buckeye Equipment enables you to do this. The line is *complete* and is used, enthusiastically, by big and little fire departments everywhere. Be SAFE in *any* emergency. Write today for catalog.

Fig. 109
With Valve

Fig. 937
Heavy-Duty
Exhaust Whistle

Fig. 930
Junior Type Roto-Ray

Fig. 900
2½" Shut-off Nozzle

BUCKEYE IRON & BRASS WORKS
DAYTON, OHIO

BUCKEYE
Fire Department Accessories

"DANDRY"— AMERICA'S
QUALITY SALVAGE COVERS

In these days of emergency, "Dandry" Salvage Covers are playing a tremendously important part in the plans of Civilian Defense organizations for the protection of property, and because of their superior quality, "Dandry" Salvage Covers are being specified by leading Fire Departments and Defense Councils.

The major portion of our expanded facilities are now devoted to the requirements of our Armed Forces, but we are supplying all requirements to the best of our ability, subject, of course, to existing regulations.

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Manufacturers of Everything of Canvas
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WAR FARE

Alarms and Discussions Clipped and Culled from the War News of the Day, of Interest to the Fire Service.

Roi B. Woolley

Omaha Officers Resign

F. M. Donnermeyer, Assistant Chief and for 37 years a member of the Omaha (Neb.) Fire Department, was named Fire Chief for the new Lincoln (Neb.) Air Base. Chief Art Olsen, of Omaha Department, is quoted as saying that Donnermeyer is the 24th member of that Department to retire since January 1st. Assisting Donnermeyer on the Lincoln job will be Val Blockwitz, Assistant Chief of the Lincoln (Neb.) Fire Department. In addition, our Omaha correspondent (J. L. V.) reports that others of the Omaha Fire Department who have filed notice of retirement, are Capt. William Hammond, 46, with 27 years of service—and Capt. William I. Ryan, 47, a member of the Department for 21 years. The report further indicates that a possible half dozen other Omaha firemen may bow out to fill war-time jobs.

* * *

"Reprisal Raid"

In German "reprisal" raids on the City of Canterbury (England) bombs were directed mainly at the famous Canterbury Cathedral. Incendiaries fell on the Cathedral roof, but were smothered before serious fires could develop. Hundreds of the Cathedral's windows were blown out. Many homes in the vicinity were destroyed by fire. In the town itself, the Royal Fountain Hotel, 800 years old, was burned out as well as several other places of high historic prominence. Goes to show that places of worship, " open" and non-manufacturing cities, are not safe from the fury of the mad Nazis.

* * *

Take This Lesson to Heart

Those doubting Thomases in the Fire Service who have been crying down the warnings of leaders in the Service, and in OCD and other Governmental circles (including the Army and Navy) had better study the details of that seizure of eight saboteurs by the F. B. I. as given in the press of June 29th.

These eight, in case you missed the news, were landed in two groups from subs, on to Florida and New York coasts, along with orders to blow up certain key plants and places and create panic in American cities. Furthermore, they were given the "tools"—in the form of all sorts of incendiary and explosive equipment—to do the job well. Also, they were provided $170,000 cash to be used for bribery where necessary. Among the plants "listed" for sabotage were four of the Aluminum Company of America, property of the B. & O., Pennsylvania and other railroads, bridges, canals and docks and the New York City water supply system in Westchester County. All the objectives singled out are vital to war production and are heavily guarded. Furthermore, bombs were to be placed in lockers of department stores, to cause fires, spread panic.

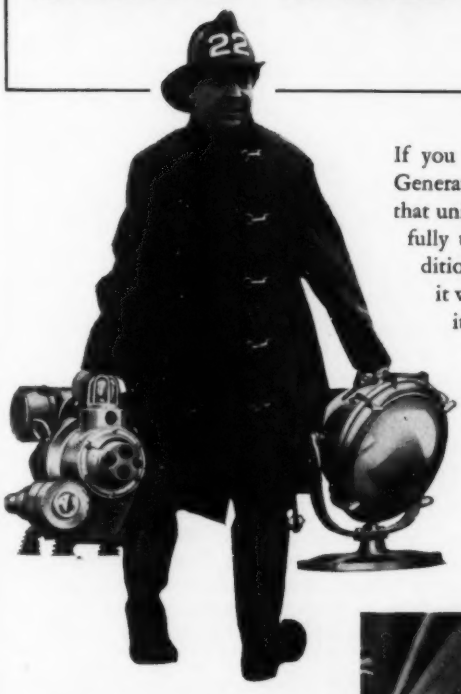
Location of these objectives—to any one who cares to study the list, will disprove the contention of some of our worthy brothers who have been claiming that *smaller places* and rural districts need not worry about saboteurs—oh, no!—they would only be interested in the *big* cities and production areas!

* * *

Hot Off the Tape

Mayor LaGuardia of New York City opines as how those young fellers deferred in the draft because of dependents oughta sign up and do their part in the Civil Guard or other Civilian Defense organizations. There's room for thought and an argument there. . . . Chief Higgins of Schenectady has been named Fire Administrator for New York State; salary, $6,500. . . . The Office of Facts and Figures quotes German radio as reporting "German children of less than 15 years, will henceforth be enrolled in the Fire Department. Normally, children will not be called upon to work except during the day, in order to put out incendiary bombs, or in emergency cases. But in cases of urgent public danger, they may be asked to work at nights." . . . The recent strike of certain workers for pay said to be deducted by their employers because of 20 minutes they were idle during a test blackout recalls the ruling laid down by the Wage-Hour Division of the Department of Labor back in April to the effect that workers will *not* be paid for the time they pass in air-raid shelters during blackouts or enemy attacks unless they perform some activity for their employer in that period (N. Y. papers, April 26, 1942). . . . What's become of our old friend Constable Herbert Scott of Lunnon? You might give us a buzz, Constable! . . . Ohmigosh! One of those Nazi spies and saboteurs captured by the F. B. I. (according to the papers of June 28th) was formerly employed as a waiter in a restaurant "outside of White Plains (N. Y.)," and this is the "spot" where we used to go to get us a load of *Sauerbraten!* . . . At long last, New York City has received its first substantial shipment of air raid helmets—80,000 of 'em. . . . Under the new Civilian defense set up in New York State, standardization of threads gets a front-page play. . . . One of the prize stories of the day is that of the Berliners who are trying to convince themselves and the rest of Hunland that an amicable (?) arrangement could be made (they don't know how) with the British whereby each will refrain from bombing cities. This, of course, after the Nazis have left almost a third of many English cities in ruins. . . . The Duke and Duchess of Windsor aided the Nassau (Bahama) fire fighting forces and volunteer groups in fighting a $2,000,000 fire that swept the downtown sections of Nassau, June 28th. . . . *Last year accidents killed off more than twice the number that were killed in the ranks of the AEF in the first World War. These accidents cost* $4,000,000,000. *The motor vehicle led in causes, with "all burns" third on the list—approximately* 8,000 *in number.* . . . The Brooklyn Navy Yard has a new and powerful air raid siren, operated by "air compression," says the wayward press. . . . A break in a refrigeration pipe permitted the escape of sulphur dioxide fumes in the fire-scarred S. S. Normandie (now being salvaged), which felled two fire

FIREMAN SAVE OUR CHILD!



If you have a Homelite Portable Generator, please baby it. Although that unit was built to stand up faithfully under the most severe conditions, it now looks as though it will have to last long beyond its normal life. All Homelite Portable Generators and Pumps are now going into the armed forces. There can be no replacements for the regular users until the great day of peace arrives.

You'll Need It More than Ever

With every city and town facing emergency conditions, a Homelite Portable Generator will prove doubly important. You'll need it to keep fire losses down to a minimum. You'll need it for emergency floodlighting in hospitals, public buildings, airports or other spots blacked out by power failures. And you'll certainly need it if any air raids come.

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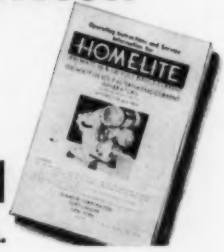
Our service manuals show exactly how to keep your Homelite Units running better and longer. It illustrates how just a little care will save lots of wear. Send for a free copy today. Specify in your letter the model and serial numbers of the units you now have.



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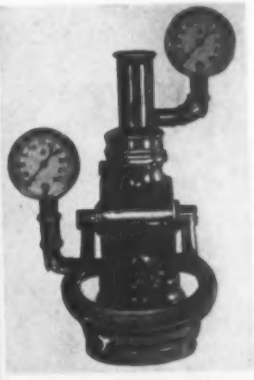

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guards and drove 20 others out of the ship. Six tanks of oxygen were used in efforts to revive the two, who were removed to hospital in serious condition.

Dominion Association of Fire Chiefs to Meet

The Dominion Association of Fire Chiefs are holding their 1942 annual meeting on August 11-14 at Kitchener, Ohtario, which can be reached by rail service in half a day from either Buffalo or Detroit. Convention headquarters will be the Walper Hotel Kitchener.

On the opening day of the convention, Tuesday, August 11, the chief speaker will be T. Alfred Fleming of the National Board of Fire Underwriters, New York City. On Wednesday, August 12, the chief convention speaker will be District Officer Edgar A. Kirby of the London, England, Fire Brigade, while at the annual banquet that evening the guest speaker will be George W. Elliott, the Defense Coordinator for Philadelphia and a past President of the National Fire Protection Association. On Tuesday, August 13, the chief speakers will be the Honorable R. J. Manion, Director of Civil Air Raid Protection for Canada, and Major General L. R. LeFleche, the Associate Deputy Minister of National War Services for Canada who has the task of organizing the Corps of (Civilian) Canadian Fire Fighters for Service in Great Britain. There will be many other speakers, including fire chiefs, who will deal with civilian defense topics and present day problems of fire chiefs.

WHAT'S BURNING?

THE following list includes fires of $50,000 loss and over in the United States and Canada, for the month of June, 1942. These figures compiled from the telegraphic reports, are based on estimates made at the time and are subject to later investigation and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred. The figures represent losses in thousands of dollars.

Month Ending June 30	Loss in Thousands Dollars
Eldorado, Ark.—Roundhouse and machine shops of Rock Island Railroad destroyed	80
Los Angeles, Cal.—Set at Paramount Studio destroyed	65
Marysville, Cal.—L. C. Saylor store, an adjoining bldg. and all but one cabin of Saylor Hotel	50
Ottawa, Que.—Freiman Co., Ltd., furniture warehouse destroyed	80
Ontario, Cal.—Dairymen's Grain & Milling plant destroyed	70
Oak Hill, Ohio—General Refractories Co. factory damaged	125
Lebanon, Tenn.—Cumberland River diesel engine boat Witoma destroyed	50
Stockton, Cal.—Stamping and Ball Mill of Carson Hill Gold Mining Corporation destroyed	325
Sandpoint, Ida.—Jones tailor shop, Lu-Ester Cafe and terminal cafe destroyed	50
Paris, Ky.—J. J. Newberry department store damaged	50
St. Paul, Minn.—Schroeder Milk Co. plant destroyed, nine milk trucks either damaged or destroyed	50
Raysal, W. Va.—Raysal store of Pond Creek Pocahontas Coal Company destroyed	50
Oshawa, Ont.—Schofield Woolen Mills plant damaged	65
Decorah, Ia.—Main bldg. of Luther College destroyed	80
Canton, Ohio—Repair hangar operated by Poorman Service Co., seven airplanes and machine shop equip. at McKinley Airport damaged	65
Logan, Ohio—J. C. Penney store bldg. destroyed	80
Indianapolis, Ind.—National Starch Products Co. plant damaged	170
Dallas, Tex.—Southwest Tablet Co. destroyed	200
Birmingham, Ala.—Grayson Lumber Co. damaged, dry kiln and planing mill destroyed	80
San Francisco, Cal.—Twenty-third and Mission Market, States Liquor store and shoe store damaged	80
Winston, Mont.—Vacant C. F. Ball mill at the old General Custer mine destroyed	50
Morgantown, N. C.—Three warehouses of Drexel Furniture Co. plant destroyed	80
Toronto, Ont.—Rumley Building occupied by Plate & Structural Steel Co., Mutual Sales Co., Casewin Sash Co. and Marel Paint & Oil Co. destroyed	100
Los Angeles, Cal.—Bldg. occupied by Co-operative Bldg. Materials Co. and United Costumers damaged	50
Easton, Pa.—Swift Salvage and Retreading Bldg. of Easton Iron & Metal Co. damaged	70
Newark, N. J.—Flag Ship Night, destroyed	100
Redding, Cal.—Shasta County bldg. destroyed	50
Brighton, Mass.—Stop-and-Shop Super Market destroyed	65
St. Paul, Minn.—Certified Ice & Fuel Co. damaged	65
Olympia, Wash.—St. Peter's Hospital damaged	80
Bieber, Cal.—Davis Creek Lumber Co. destroyed	80
Waterloo, Ia.—Black Hawk Electric Co., Miller Printing Co., Foval & Alderman Barber Shop, Roth Jewelry store, Buffalo Hat Shop and Stewart Tire Co. destroyed	65
Birds Landing, Cal.—Dwelling of Louis Traung destroyed with clubhouses and wharves	50
Rouyn, Que.—Basile Olivier Lumber Mill and Canadian National Railways box car destroyed	50
San Francisco, Cal.—Two airport hangars damaged	425
Dubuque, Ia.—Iowa Egg Products Co. plant destroyed	425
Waterloo, Ia.—Stock of new and used tires and supply of scrap rubber destroyed	50
Troy, Ohio—Trow Country Club destroyed	60

IN ORDER TO WIN on the home front, our fire fighters—no less than our men in direct combat with the enemy—must have dependable equipment.

Fire fighters know that they can rely upon WATEROUS PUMPS. Behind these fire pumps is a 56-year record of dependable performance. Specify WATEROUS for *built-in dependability.*

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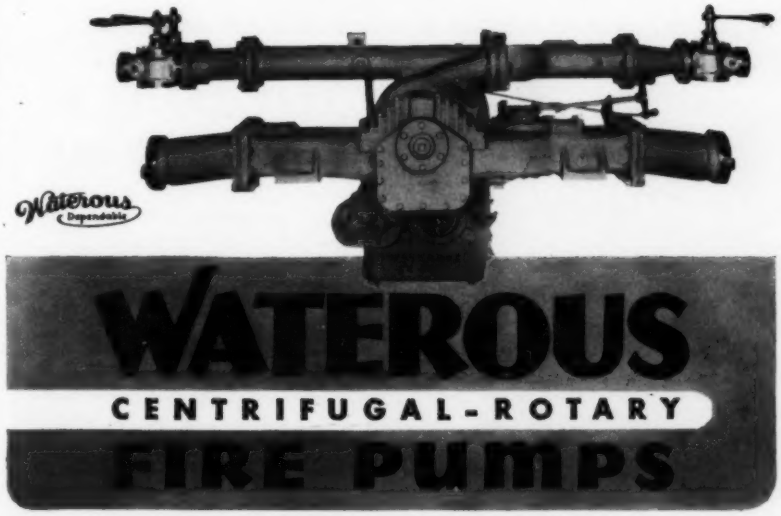

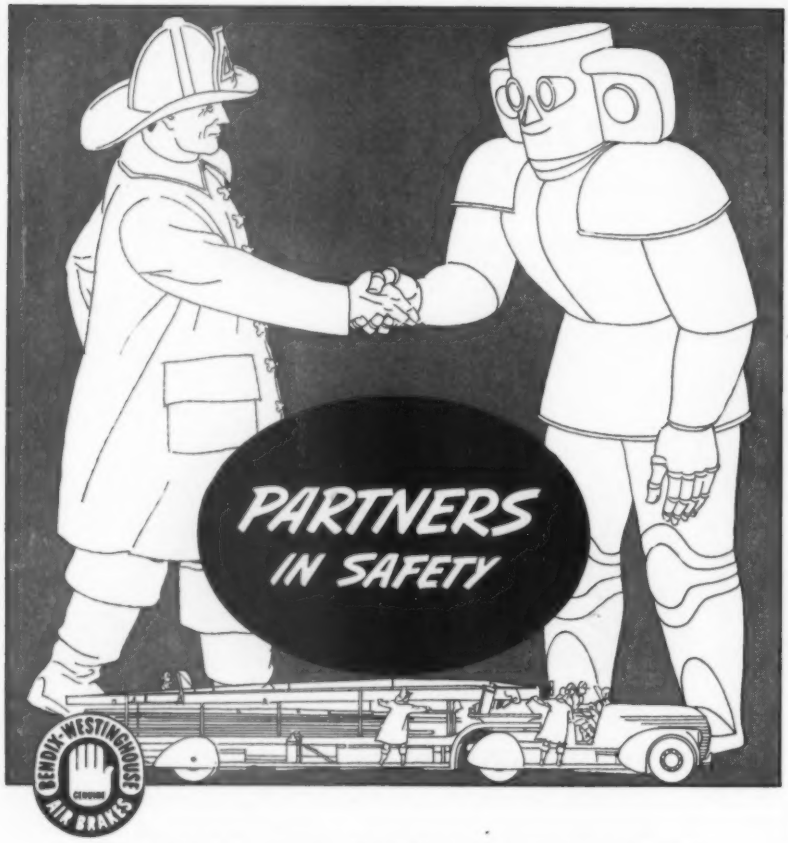

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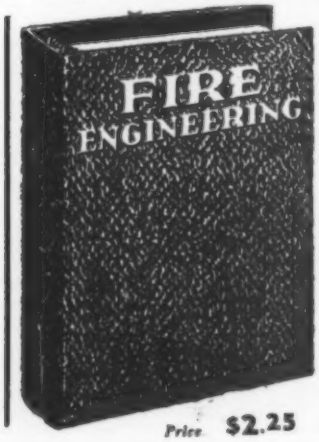

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Borger, Tex.—Butane division of Phillips Petroleum Co. damaged	80
Walnut Grove, Cal.—Walnut Grove Packing plant destroyed	65
East Boston, Mass.—Trenton Street Baptist Church damaged	50
Ferrysburg, Mich.—Dredge owned by Lyons Construction Co. destroyed	80
Fort Lee, N. J.—Truck owned by S. Cherry Chatam of Winston-Salem, N. C., with load of rayon and cigarettes damaged	50
Chester, Pa.—Two apartment bldgs, damaged	50
Norfolk, Va.—F. W. Woolworth & Co. store damaged	50
Bristol, N. H.—New Hampshire Public Service Co. plant and stock damaged	65
Tacoma, Wash.—Henry Mill & Timber Co. destroyed	425
Harlan, Ky.—Twenty-five new automobiles and twenty-five used cars and trucks destroyed in Harlan Motor Co. bldg.	80
Gaffney, S. C.—Bldgs. housing T. J. Selo's cafe, A. L. Curtis market, Dixie Glove Mfg. Co., C. B. Poole's Wholesale Candy & Specialties and W. M. Webster's department store destroyed and Getty's Lumber Co. damaged	200
Walla Walla, Wash.—Twenty-one frame bldgs. at new army air base destroyed with machinery and hospital equip.	125
Weston, Ont.—Armstrong Door Co. plant destroyed and adjoining bldgs. damaged	80
Medford, Ore.—Prospect Fir Mill owned by James Dole destroyed	50
Chester, Pa.—Bldg. housing Chester Recreation Bowling Alleys, the Union Bus Terminal and restaurant destroyed	125
Vancouver, B. C.—Main plant of the Sterling Lumber Co., Ltd. destroyed	80
New Britain, Conn.—Capitol Theatre Building damaged	80
Shelter Island Heights, N. Y.—New Prospect House, summer hotel destroyed	225
Bluefield, W. Va.—Eastern Coal Corporation No. 3 tipple destroyed	60
Petaluma, Cal.—Ernest Hobbie store damaged	80

Winter Chief at Syracuse

George C. Winter has been appointed as Chief of the Syracuse, N. Y., Fire Department to succeed Chief Philip N. Eckel who is retiring after forty-three years and nine months' service.

Chief Winter was appointed to the Fire Department June 1, 1910. He was promoted to lieutenant May 22, 1918, to captain, August 8, 1921, to district chief December 1, 1936, and to second deupty chief, January 1, 1942.

Appointed to the position of Frst Deputy Chief was Frank M. Savage who joined the department on April 24, 1905. He was promoted to lieutenant on July 15, 1915, to Captain June 17, 1918, and to district chief on June 1, 1928.

Both Chiefs have received departmental awards for distinguished service on duty. Chief Winter received the Arthur Jenkins fire medal in 1925, an award memoralizing the interest of the founder of "The Syracuse Herald," in the Syracuse Fire Department.

Chief Savage received the Francis Hendricks fire medal for 1928, an award set up under the will of the late Senator Hendricks.

Chief Eckel, the retiring Chief, joined the department on May 11, 1877, after serving six years as a substitute. He gained the rank of district chilef on January 1, 1920, becoming Chief on October 23, 1941.

He comes from a line of fire fighters. His father, Chief Philip Eckel was the second Chief of the Syracuse Fire Department. The name was carried on by Chief Nicholas Eckel, first cousin of his father. It is still carried on by Captain Charles Eckel of Engine Company 8, cousin of the retiring Chief.

Retiring with Chief Eckel is First Deputy Chief Milton N. Harger who has had thirty-seven years and four months service in the department.

Convention Dates

Aug. 11-14—DOMINION ASSOCIATION OF FIRE CHIEFS. Annual meeting. Kitchener, Ont. Secretary, Chief James Armstrong, Kingston, Ont.

Aug. 11-14—VIRGINIA STATE FIREMEN'S ASSOCIATION AND AUXILIARY. Annual meeting. Luray, Va. Secretary, R. B. Barker, Box 893, Newport News, Va.

Aug. 14-15—VERMONT STATE FIREMEN'S ASSOCIATION. Annual meeting. Middlebury, Vt. Secretary, W. H. Adams, Vergennes, Vt.

Aug. 18-19 — FIREMEN'S ASSOCIATION, STATE OF NEW YORK. Annual meeting. Syracuse, N. Y. Fred A. Davis, Fort Edward, N. Y.

Aug. 27-28—CONNECTICUT STATE FIREMEN'S ASSOCIATION. New Haven, Conn. Secretary. D. W. Harford, South Norwalk, Conn.

Aug. 31-Sept. 5—PENNSYLVANIA FIREMEN'S TRAINING CONFERENCE. Annual meeting. Pennsylvania State College, State College, Pa. Secretary, Charles E. Clark, Box 217, Wayne.

September—NEW HAMPSHIRE STATE FIREMEN'S ASSOCIATION. Annual meeting. Meeting place to be decided upon. Secretary, Aubrey G. Robinson, Manchester, N. H.

Sept. 8-11—WESTERN PENNSYLVANIA FIREMEN'S TRAINING INSTITUTE. Annual meeting. California State Teachers' College, California, Pa. Secretary, Joseph Huscroft, North Charleroi, Pa.

Sept. 9-11—TENNESSEE FIREMEN'S ASSOCIATION. 12th annual meeting. Nashville, Tenn. Secretary, Joe J. Martin, Nashville.

Sept. 15-16—IOWA FIREMEN'S ASSOCIATION. Annual meeting. Tipton, Ia. Secretary, H. C. Reinholdt, Manning, Ia.

Sept. 18-19—NEW JERSEY STATE FIREMEN'S ASSOCIATION. Annual meeting. Meeting place to be decided upon. Secretary, Evan F. Benners, Room 602, 24 Brandford Place, Newark, N. J.

Sept. 21-22—TEMISKAMING FIREMEN'S ASSOCIATION. Annual meeting. New Liskeard, Ont. Secretary, F. E. Thompson, Box 686, New Liskeard, Ont.

Sept. 21-24—CALIFORNIA STATE FIREMEN'S ASSOCIATION. Annual meeting. Fresno, Cal. Secretary, Harry E. Strasser, 2046 Oregon Avenue, Long Beach, Cal.

October — ARKANSAS STATE FIREMEN'S ASSOCIATION. Annual meeting. Fayetteville, Ark. Secretary, H. D. Compton, Central Fire Station, Little Rock, Ark.

Oct. 5-8—INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION, INC. 47th annual meeting. Atlantic City, N. J. Secretary, Irvin Shulsinger, 8 East 41st St., New York.

Oct. 6-8—FIREMEN'S ASSOCIATION OF THE STATE OF PENNSYLVANIA. Annual meeting. Allentown, Pa. Secretary, Charles E. Clark, Wayne, Pa.

Oct. 13-15—ILLINOIS FIREMEN'S ASSOCIATION. 55th annual meeting. Jacksonville, Ill. Secretary, Chief Roy W. Alsip, Champaign.

Valley City First in Fire Waste Contest

Valley City, S. D., has taken honors for the eleventh consecutive year in the United States Chamber of Commerce Inter-Chamber Fire Waste Contest. This time it was first place in Class Six (cities of 20,000 population or less). The work of the Fire Department has saved the people of Valley City thousands of dollars in fire insurance premiums because of reduced rates.

Chief William T. Craswell, who heads up the department, first joined the fire fighting force in 1899. He was made Fire Chief in 1906, resigned in 1911, but continued in the department, was re-elected Chief again in 1917 and is still serving. His assistant is N. J. Hesch, who has been Assistant Chief for twenty years.

About thirty men serve on the volunteer fire department. These men hold drills regularly, take instruction in first aid and safety and otherwise try to improve themselves for more effective work in safeguarding the lives and property of the community.

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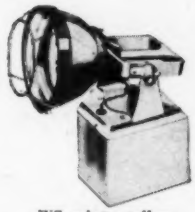

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Super-6 using small rechargeable battery

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where it has many times proven to be truly a "life saver".

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South Dakota Firemen Meet

R. W. Hanigan of Pierre, S. D., was elected President of the South Dakota Firemen's Association, and Parkston and Hudson tied for top honors in the firemen's tournament at the annual State Fire School held in Watertown during the first week of June.

Parkston and Hudson teams finished the tournament deadlocked with 42 points each. Duplicate trophies were awarded to the two winning teams. Huron finished in third place with 30 points. Pierre made 25 points; Milbank, 23; Beresford, nine; Madison, seven; and Brookings, one.

The state association authorized its board of directors to choose the next year's meeting site.

Roy Bishman of Brookings was elected Vice President; M. C. Sullivan, Parkston, was re-elected Secretary, and I. D. Lee of Madison, renamed Treasurer. Sam Goehring of Avon, retiring President, was named to the Board of Directors to succeed Ted Wagner of Rapid City, who resigned during the year. Other directors are Gaile Villier, Hudson, and L. J. Bingham, Hot Springs.

Despite tire restrictions, more than 300 firemen and a hundred or more visitors attended the fire school and tournament.

Speakers and instructors at the school were: Governor Harlan J. Bushfield of South Dakota; Harry K. Rogers, engineer for the Western Actuarial Bureau; Sanford Herberg, Minneapolis, Fire Underwriters Insurance Bureau; Joe Fetters, Lincoln, Neb., of the Nebraska Trade and Industrial Educational Division; George K. Burt, Pierre, State Commissioner of Insurance and Fire Marshal; I. D. Lee, Chief of the Madison Fire Department, and the Rev. Walter C. Rundin, Chaplain of the Nebraska Firemen's Association.

Protection against war-inspired fires was the theme of the five-day school with many of the speakers stressing dangers of bombing from the air. Mr. Rogers, who served as chief of the school, told the firemen that South Dakota's lack of defense against grain field fires and bombing is "amazing."

He said he believed South Dakota's grain fields are in grave danger from the air. One plane, he pointed out, could carry thousands of fire "calling cards" and spread fire over a large area in a short time.

Prizes of 1,750 were awarded in the seven contests of the annual tournament.

Social events of the convention included a Dutch Lunch served by the Watertown Fire Department and several luncheons for the wives of the visiting firemen.

FLOYD EMERSON

Dayton Air Raid Tests 100 Per Cent Successful

A practice air raid drill held in the West Side section of Dayton, Ohio, recently was given a 100 per cent successful rating. It was the first to be held in Dayton and came as a complete surprise to the residents of the area.

The "bombs" that struck were firecrackers and their imaginary craters were marked by cards, but the drills gave trained civilian defense workers

ample opportunity to apply the instructions they have received in the training months.

Incendiary bombs, exploding in carefully selected places, brought into action the shovels full of sand which is kept in readiness, and the hundreds of pedestrians attracted to the scene gave the auxiliary policemen something to work with.

A firecracker "bomb" hit at the intersection of Kammer and Westwood Avenues. This was followed by planned incidents, including simulated explosion of high explosive and fire bombs that took a "toll" of six "casualties" in a concentrated L-shaped area on the two intersecting streets.

More than 125 air raid wardens, fire watchers, Red Cross workers, and other civilian defense volunteers and officials took part.

Two B-25 bombers from nearby airfields added realism to the proceedings as they roared over the "stricken" area. They returned after the all clear had sounded.

Repeat performances of the air raid drill will take place in all sections of the city at undisclosed times and places.

New Mexico Firemen Elect Officers

At the recent convention of the New Mexico State Firemen's Association the following officers were elected: President, Chief W. A. Westerfield, Albuquerque; First Vice-President, Chief F. B. Macatee, Lovington; Second Vice-President, Chief Tom F. Bonner, Fort Sumner; Third Vice-President, Chief Neil C. Haynes, Las Vegas, and Secretary-Treasurer, Theodore A. Rosenwald, Albuquerque.

Raton, N. M., was selected as next years' meeting place, the date to be decided upon later in the year.

Represented at the meeting were thirty-two New Mexico fire departments, one from Colorado and one from Mexico.

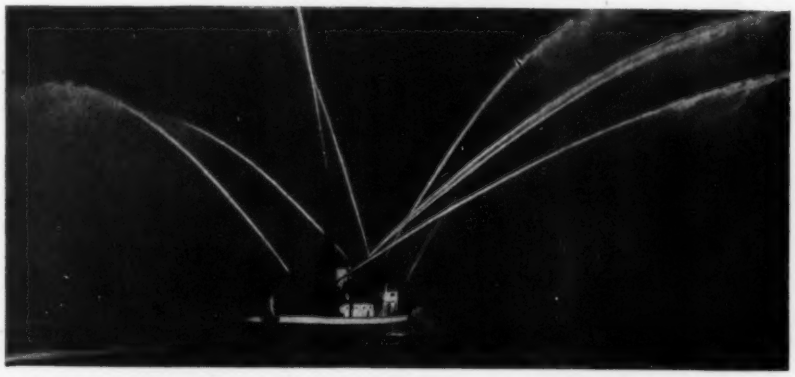
Courtesy Bridgeport Herald

"Tom" Magner in New Role

Captain "Tom" Magner of Bridgeport, FIRE ENGINEERING's veteran Connecticut correspondent, couldn't resist the chance to kiss his charming daughter, Florence Marie, after her recent marriage to Albert Bernard Johnson, just as a local newspaper cameraman happened on the scene.

MR. FIRE CHIEF . . . . .

INSIST ON THE ORIGINAL INVINCIBLE NOZZLE



"Fire-Fighter"—New York's $1,000,000 *Fire Boat equipped with nine Invincible Nozzles*

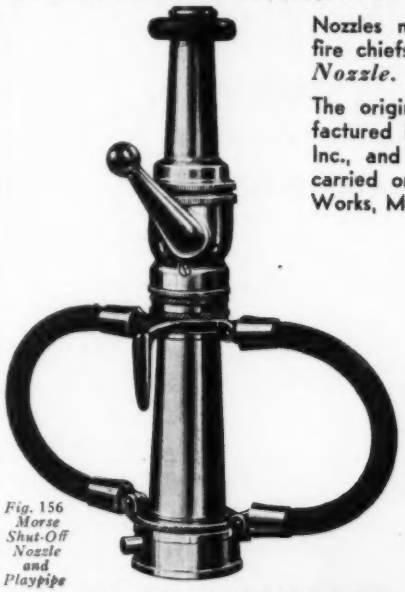


Fig. 156 Morse Shut-Off Nozzle and Playpipe

Nozzles may look the same, but experienced fire chiefs know there is only *one Invincible Nozzle.*

The original Invincible Nozzle was first manufactured in 1837 by Andrew J. Morse & Son, Inc., and the same high standards are being carried on today by the F. N. McIntire Brass Works, Morse successors.

Every genuine Invincible Nozzle is a tailored, machined job, made from the best materials, and tested at working pressures, before leaving our shops.

The next time you specify a nozzle, insist on getting the best, specify the Original Invincible Nozzle, made only by F. N. McIntire Brass Works.

"If it's Brass —Try Us"

F. N. McINTIRE BRASS WORKS

Successors to A. J. Morse & Sons

BOSTON 1837-1941 MASS.

See Page 398

We Can Supply Any

BOOKS

on any phase of

FIRE FIGHTING OR FIRE PREVENTION

at publishers' regular list prices.

See Page 398

CASE-SHEPPERD-MANN PUBLISHING CORP.

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PACIFIC PORTABLE PUMPERS FOR VICTORY

Protecting America's natural resources is doubly important during these busy war days.

PACIFIC PUMPERS now being produced by the Pacific Marine Supply Company are going direct to our Armed forces. We know Civilian Fire Protection Organizations will understand if their orders cannot be filled immediately.

As the leader in Portable Pumper equipment development, we gladly offer our facilities to owners and users of fire fighting equipment.

If you have a problem we will be glad to have you consult with us. Just drop a card to:

PACIFIC MARINE SUPPLY CO.

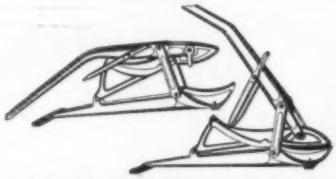
FIRE FIGHTING EQUIPMENT DIVISION

SEATTLE, WASHINGTON

THE NEW PEERLESS HOSE CLAMP

Type E. The Result of 30 Years Experience in Hose Clamp Production

Demonstrated under Official Committee of International Fire Chiefs Convention at Toronto on a line from a pumper carrying 225 pressure and at Oklahoma City and New Orleans on 350 pounds hydraulic pressure. Witnessed by hundreds of Chiefs attending.



THE NEW PEERLESS HOSE CLAMP
—TYPE E—
SIMPLE CONSTRUCTION
INSTANT APPLICATION AND RELEASE
AUTOMATIC LOCK

SAVES TIME — MEN — EFFORT
Making New Methods Possible.

APPLY CLAMP ON FLAT HOSE
Check Water—Carry the Line Up Ladder or into Warehouse Empty —Release Man at Hydrant to Help Handle Line.

SAVE TIME IN MAKING CHANGES
No Tracing of Lines — To Shut Down — Instead Use the Men to Make the Changes.

SPECIFY
The NEW PEERLESS on NEW MOTORS
AND GET THE BEST

Sold by All Reputable Dealers
Patented U. S. and Canada
MANUFACTURED BY
KELLAM MANUFACTURING CO.
ATLANTA - - GEORGIA

Evidence Necessary to Convict for Arson

(*Continued from page* 434)

relates, to justify a jury in basing its ultimate or final conclusion of such testimony.

For example, in Sawyer v. State, 132 So. 188, it was disclosed that the chief of the municipal fire department testified that he believed a specified house had been set on fire by use of gasoline.

The testimony given by the Chief of the Fire Department was objected to by the counsel for the accused. However, the higher Court held such testimony admissible, and said:

"There could be no objection to that part of the chief's testimony as to the facts concerning the fire and the conditions he found in respect to the building, or what remained of it after the fire, upon which he based his opinion. But, ordinarily in an arson case a witness *cannot* testify as to his opinion that the fire was, or was not of incendiary origin, that being a question for the jury to determine. . . . However, this witness was by his testimony qualified as an expert."

Therefore, it is quite apparent that persons, as fire chiefs, and other expert witnesses may effect desirable and important results in providing testimony likely to convince a jury of the guilt of one accused of the crime of arson. This is so because expert witnesses may give testimony of a character not permitted to be given by common witnesses. And instead of the jury drawing its conclusion from the testimony presented by common witnesses, the expert witness may *instruct* the jury regarding the same facts.

Department and Other Reports Received

Milwaukee, Wis.—Annual Report of the Fire Department for the year 1941.

Philadelphia, Pa.—Seventy-second annual report for the year 1941 of the Fire Insurance Patrol. 18 pages.

Belmont, Mass.—Supplement report of the Fire Department for the year 1941. 16 pages.

Springfield, Ohio—Annual report of the Fire Department for the year 1941.

Melbourne, Australia—Report of the Metropolitan Fire Brigades Board for the year ending June 30, 1941. 40 pages.

Beverly Hills, Cal.—Annual report of the Fire Department for the year 1941. 30 pages.

Waterloo, Ia.—Thirty-eighth annual report of the Fire Department for the year ending March 31, 1942. 24 pages.

Round Table

(*Continued from page* 462)

we always keep back men and apparatus for the protection of our city.

The city carries insurance on all men regardless of where they are fighting fires.

Wilson McLaughlin, Chief, Sandusky, Ohio: We do not make a charge for calls to the rural sections about the city for we have a contract with two of them for fire protection. We receive $1,000 from one and $800.00 from the other. Due to the contracts the men are protected by the city in case of accident. In the case of giving aid to another city in the event of fire, we have a friendly agreement with them that the men are protected by the city to which we make the call. This also holds good if any of their men make a call to our city.

R. H. Drum, Chief, Green Bay, Wis.: We have a reciprocal agreement with nearby cities and make no charge. We do not leave the city for any call in the country except to a few industrial plants just outside the city limits. For these plants the charge is $200.00 for the first hour and $50.00 for each additional hour for each piece of apparatus.

The men are given full protection by the city just as if they were injured in performance of their duties in the city.

William J. Lutz, Chief, Wilmington, Dela.: The Wilmington Bureau of Fire responds to out-of-town alarms only at the request of the chief officer of the rural company in charge at the fire. There is no charge for this assistance.

A property owner, residing within five miles of the city limits, may contract for fire service with the Wilmington Bureau at the rate of twenty-five cents per $100.00 of the New Castle County assessment, this assessment including the value of the land plus improvements. We have a number of these agreements in effect at this time.

This Bureau responds to all alarms in institutions within a considerable distance of the city. This covers the various hospitals, asylums and reformatories. This service has existed for some time.

We also, due to the war, cover the numerous defense plants and factories in the state. This is done because of the constant threat of sabotage to the various defense industries.

The firemen in this Bureau are all under state compensation laws. Full salary is allowed for any man sick or injured. Hospital costs are paid by the city for all accidents occurring on duty.

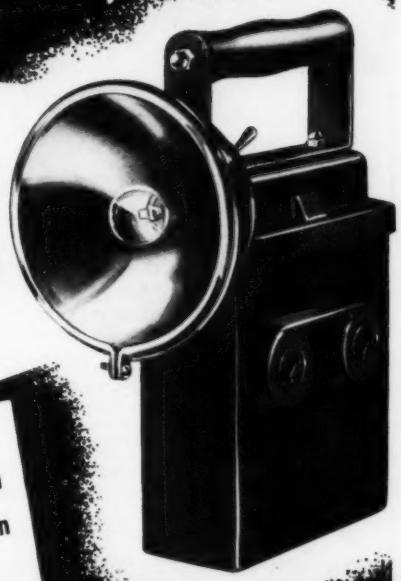
Edward P. Welch, Chief, Columbus, Ohio: The Columbus Fire Department makes the following charges for out-of-town fire protection:

Bexley, Ohio, is serviced for $16,250 per year and Clinton Township at so much per apparatus with a minimum charge of $110.00. That is, $50.00 for the apparatus crossing the corporate limits, $50.00 per hour or part thereof worked at the fire and $10.00 per mile or part thereof traveled.

The only insurance provided under this set-up is our own pension sys-

DEPENDABLE ECONOMICAL LIGHT
for any Emergency

THE NEW
WHEAT
Rechargeable Spotlight
MODEL 158



FEATURES
★ Positive "non-spill" Construction
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★ Free use of Hands. Light carries conveniently on Shoulder Strap
★ Weighs only 92 ozs. complete
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WRITE FOR COMPLETE DETAILS

2500 FOOT BEAM
25000 CANDLE POWER
1000 HOURS OPERATION

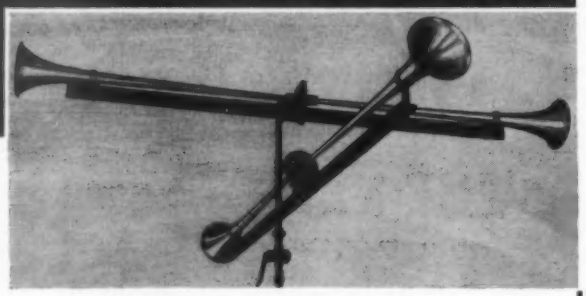
Critical Materials Reduced to a Minimum to insure Availability

KOEHLER MANUFACTURING COMPANY, INC.
MARLBORO, MASSACHUSETTS, U. S. A.

Refer to the
★ WHERE TO BUY SECTION ★
Page 487

BUELL

AIR RAID WARNING SIGNALS



No. 600-D
6 FT. OVERALL
BELLS 7"
DIAMETER

BUELL Air Raid Warning Signals use the most simple and effective sound-producing principle known today, a patented BUELL feature. They transfer air energy directly into sound, giving a powerful, dependable warning of high attention-getting value. 50 units of the 600-D type shown above have been installed in Portland, Oregon. . . . 10 suburbs of Chicago have installed this unit.

Buell Air Pressure Warning Signals can be used for alarms and special purpose signaling in industrial plants, ship yards, etc. Ideal for coding to call volunteer fire departments.

Write or wire for descriptive literature, NOW!

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Specify HALE

FIRE PUMPS HALE CONSHOHOCKEN

. . . . . The Fire Chief who commands Hale Equipped Pumping Engines, Pumping Units or Trailer Pumpers is assured of a high standard of performance whatever the emergency. . . . . .

Write today for the Catalog and Folders on the complete line of Hale Pumps.

HALE FIRE PUMP COMPANY
CONSHOHOCKEN, PA.

tem and city ordinances which covers the men in case of accident. They are also covered by the workmen's compensation for hospitalization.

At the present time our department is attempting to coordinate all fire apparatus within Franklin County on a basis of exchange. We have twelve locations that have mobile fire apparatus, and it is our intention to assist one another in the event of serious fire, if it can be worked out.

The last paragraph of our agreement is the one that is holding the program back from being executed. That is the paragraph in which we ask all who agree to the plan to protect our apparatus in case of accident for damages, but not until they leave the corporate limits. They seem to be somewhat disturbed on this particular paragraph for throughout Franklin County, with the exception of the City of Columbus, insurance is carried on their apparatus for their protection, and they do not think it fair that they be asked to stand the damage to our equipment in the event of accident in their territory. Nevertheless, since they are receiving so much, in fact a great deal more than they are giving us, we felt it only just that they should cover this particular condition one way or another by insurance or otherwise.

James M. Duncan, Jr., Chief, Alexandria, Va.: No charge is made by the City of Alexandria for fire calls made outside the city.

All men, both regulars and volunteers, are covered by insurance and the regular employees are covered by workmen's compensation. The volunteers are covered by a compulsory insurance law covering firemen in the City of Alexandria and in Fairfax and Arlington Counties. They receive $25.00 per week plus hospitalization and a $3,000.00 death benefit.

C. C. Killian, Chief, Fort Worth, Tex.: Up until September 15, 1941, the Fire Department made runs outside the corporate limits of the city at no cost to those served. This practice was stopped. No insurance was provided for the men, but as they are agents of the city, they were not liable in the event of accident or injury to citizens or property. If the personnel of the Fire Department were injured or the equipment damaged, the city bore the expense.

Because of the increase in population with no increase in equipment or personnel, and the development of many sections as country estates, the demands for service were beyond the city's ability to render efficiently. It was for that reason that the service was limited to corporate limits only.

I personally believe it is bad policy to neglect the citizens within the city when those outside who do not share in the cost of maintaining the fire department benefit.

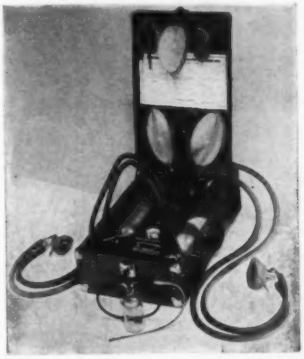
A. W. Olsen, Chief, Omaha, Neb.: We charge $100.00 for property valuation up to $5,000.00, $200.00 for valuation from $5,000.00 to $10,000.00 and $300.00 for valuations of $10,000 or over. Most property owners on the fringe of our city limits carry fire insurance riders covering the cost of fire department charges.

The City of Omaha pays hospital costs, etc., of the men injured while out of town on fire department duty.

E. F. Coop, Chief, Pasadena, Cal.: We

In Wartime . . . .

THE EMERSON RESUSCITATOR



Now, more than ever, fire departments must protect their communities against unnecessary asphyxial deaths from smoke suffocation, drowning, electric shock, and other causes, in addition to providing maximum insurance against wartime emergencies.

The Emerson Resuscitator has a definite place in the protection of your community.

J. H. EMERSON CO.
22 Cottage Park Ave.
Cambridge, Mass.

REPRESENTATIVES IN PRINCIPAL CITIES

do not make out-of-town runs except as noted below, and therefore make no charge.

The state law of California, known as Mutual Aid Act, makes it legal for any fire department to assist another department in case of extreme emergency, when the call is made by legal constituted authorities. Previous to the enactment, we had a gentleman's agreement to assist another city, although it was in violation of our local charter.

Our pension system and state compensation insurance cover men on out-of-town calls.

C. E. Ginther, Chief, Rochester, Minn.: We do not have a set price, but do answer outside calls. Those to the country are answered by a 500-gallon pumper and two men. There are no charges, as the city thinks it is good business. The Mutual Company (Farmers) give us $25.00 a call for those runs we make where they are on the property. We just received their check for $305.00 recently.

L. M. Funk, Chief, Dallas, Tex.: This subject has been a great bone of contention between the City of Dallas and the County of Dallas for over twenty years, in which time the county has spent $33,000.00 in payment for fire protection by the city.

Fires beyond the corporate limits of the city have increased to such an extent that in 1940 and 1941 the calls received from the rural area amounted to 11.2 per cent of our total number of alarms.

The annual operating cost of the Dallas Fire Department was also increasing each year, largely due to the increased calls from the county.

The city asked the county for a fair reimbursement for this fire protection service, and the county refused to pay it. The city immediately ceased answering rural alarms, and in eleven days the rural fire loss mounted to more than $35,000.00.

The county immediately asked that this service be resumed until such time as a satisfactory schedule could be worked out, which was done, and an annual fee agreed upon based upon percentage cost per alarm against cost of operation, the city assuming all responsibility.

The city pays hospital costs, etc., for injuries received while on these runs, provided the men will be hospitalized in a city institution. If not, the men pay for it through our own hospital service fund.

The cost for rural service in 1942 will average about $125.00 per fire.

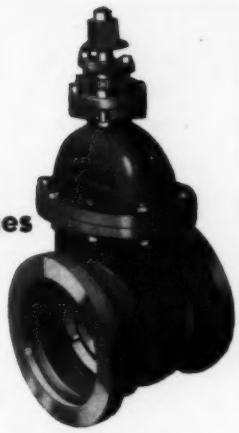
* * * *

The following replies are in answer to a previous question on regulating the storage and handling of gasoline.

W. B. Miller, Chief, Columbus, Ga.: Our City Ordinance regulates the storage and handling of gasoline. All filling stations throughout the city have underground tanks. Regulations cover distance from buildings or from cellars in adoining buildings. Large aboveground tanks are out of fire limits and certain distances are required from other buildings. Without such an ordinance there would be danger untold.

Thomas A. Qualey, Chief, Medford, Mass.: Your question is a very easy one to answer in Massachusetts. Chapter 149 of the General Laws,

War Times Increase Fire Hazards



INSTALL M H

VALVES HYDRANTS
and pipe line accessories

A. W. W. A. HYDRANTS
Underwriters Approved

Conform to American Water Works Association specifications. Approved and listed by Underwriters' Laboratories and Associated Factory Mutuals. Well known and widely used for many years.

Emergency fire fighting facilities may be often improved by installing more valves and hydrants than normal, also keeping larger stock of extras for emergency. M & H products are well known for high quality and expert workmanship, have been widely used for many years.

VALVES: A. W. W. A. types, iron body, bronze mounted with double-disc parallel seat or solid wedge type. Non-rising stem, outside screw and yoke; or with sliding stem and lever. Also furnished hydraulically operated. Square Bottom type operates in any position. All are rugged and dependable, made of best material with highest quality workmanship.

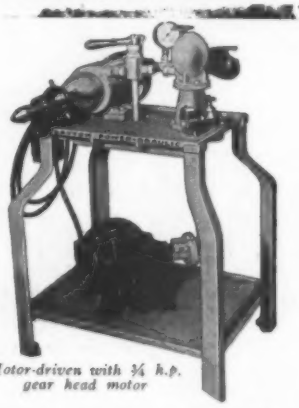
M&H VALVE
AND FITTINGS COMPANY
ANNISTON, ALABAMA

SAVE YOUR HOSE

Now More Than Ever Before!

use a

DAYTON POWERDRAULIC



Motor-driven with ¾ h.p. gear head motor

Expands couplings from ¾" to 6" suction size.

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Tests hose up to 700 lbs.

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Extracts old expansion rings from couplings by means of the Dayton Patented Extractor.

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Due to material shortage and the demands of the war effort it is daily becoming more difficult to obtain either new hose or couplings. It is therefore more and more important that you take good care of your present supply.

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This care can only be obtained by means of the Dayton Powerdraulic Expander.

Send for illustrated bulletin.

DAYTON FIRE EQUIPMENT CO.

1242-48 W. 2ND ST., DAYTON, O.

Section 23 of the Rules and Regulations reads as follows:

"No volatile inflammable fluid except an amount not exceeding one quart contained in an approved safety can and no non-volatile inflammable fluid except an amount not exceeding ten gallons for domestic use shall be kept, used or stored in any part of any building used for habitation, and no volatile inflammable fluid in quantity exceeding one gallon contained in an approved safety can, and no non-volatile inflammable fluid in quantity exceeding thirty gallons, shall be kept, used or stored, except in the tank of an automobile, motor boat or stationary engine, within fifty feet of any building used for habitation, unless a permit has first been obtained therefor from the head of the fire department under such terms and conditions as he may prescribe.

"The power to the head of the fire department to grant permits is delegated by the fire marshal under Chapter 148 and only for a limited amount of gasoline; fuel oil in buildings used for habitation up to 2,500 gallons or for industrial purposes No. 6 fuel oil up to 5,000 gallons. All over this amount is granted by local licensing authorities; in towns, the Board of Selectmen; in Boston the Board of Street Commissioners; in other cities the Board of Aldermen or the Licensing Board; in cities wherein such a board or commission is authorized to grant licenses under this charter, the commissioners are authorized to do so." This covers the situation pretty well and gives supervision over the storage of all volatile inflammable fluids in this state.

Wesley J. Dunn, Chief, Plainfield, N. J.: Due to the possibility of persons storing an extra supply of gasoline when rationing goes into effect, I would suggest that all cities and municipalities who at the present time are lacking laws to regulate this condition take immediate steps to enact some form of legislation in regard to storage of volatile liquids.

The City of Plainfield has legislation regulating the storage and handling of volatile liquids. Below is a copy of the ordinance:

"Section 3—No person shall store or have upon his premises more than five gallons of any volatile liquid unless the same is confined in a storage tank as provided by this ordinance, or unless kept in approved self-closing cans, the total capacity of which shall not exceed ten gallons.

"Section 10—Any person, or persons, or corporations, who shall violate any provisions of this ordinance shall be liable to a fine not exceeding $100.00 or imprisonment not exceeding 60 days, or both."

John M. Slocum, Chief, Huntington Park, Cal.: I think it would be very unwise to allow anyone to store extra gasoline because of the fact that many persons do not have facilities for safe storage. I believe all cities should set up and pass ordinances forbidding the storage of gasoline outside of certain given areas.

Our city has an ordinance which forbids such storage and which states under what conditions it can be stored. The person must first have a permit from the Fire Chief's office.

FOR HANDY PROTECTION AGAINST SMOKE, WEAR THE NEW, DUPOR No. 20 TWIN SPONGE MASK

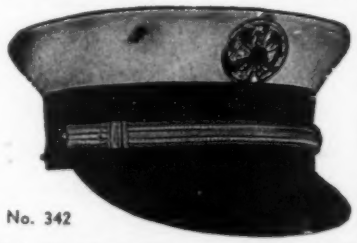
SAMPLE $2 Postpaid

- New plastic valve exhausts breathed air.
- Soft rubber mask gives air-tight fit.
- Can be worn with Goggles.
- Conversation Easy!
- Price $24 per dozen.

H. S. COVER
68 Chippewa St.
South Bend, Ind.

WENTWORTH FIREMAN'S UNIFORM CAPS

UNION MADE PROMPT DELIVERY



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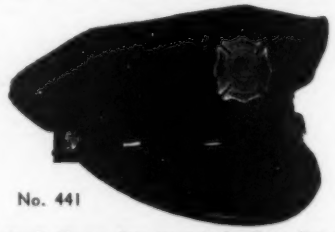
Wentworth Fireman Caps are made of the Highest Quality Standard Materials available by the Best Skilled Union Craftsmen. Our 46 years of experience and skilled workmen guarantee you AMERICA'S GREATEST CAP VALUE in all WENTWORTH FIREMAN CAPS.



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Wentworth Fireman Caps are made in all the New and Standard styles. Ball Top, 8-Point, Military, etc. Write direct for latest circular and prices or see your local dealer.

WENTWORTH-FORMAN CO., INC.
578b Washington St., Boston, Mass.

Manufacturers

Fireman Cap Specialists for Over 45 Years

The flash point of the oil, the amount to be stored, the type of container and the area in which it is to be stored must all be given.

G. E. Renken, Chief, Laredo, Tex.: Since inspections by the Fire Department do not cover dwellings, storage of gasoline in homes may not be detected. We are already suggesting that if it is necessary to store it, that it be stored away from homes, possibly in garages, sheds or outhouses.

Our standard fire marshall ordinance in force requires that volatiles be kept thirty feet away from buildings. The State Fire Insurance Commission penalizes insured risks unless self-closing Underwriters approved cans are used.

Edward Grenfell, Chief, Portland, Ore.: I believe that if a city doesn't have one, they should enact a regulatory ordinance and enforce it.

The following excerpts are taken from our city fire code:

"Gasoline exceeding one quart shall not be stored or kept on any premises in the City of Portland without obtaining a permit for such storage from the Fire Marshal.

"Gasoline stored or kept above ground in quantities greater than one quart shall be stored or kept in an approved safety can not exceeding five gallons.

"Flammable liquids of any kind shall not be stored or kept in quantities greater than one quart in any building or in any part of a hospital, theatre, hotel or assembly hall.

"All other gasoline storage shall be underground in approved tanks installed under a permit issued by the Fire Marshal's office."

Marvin K. Evans, Chief, Lynchburg, Va.: If a city does not already have an ordinance to cover the storage of gasoline, I would suggest that it adopt Part 9 on Flammable Liquids from the Suggested Fire Prevention Ordinance recommended by the National Board of Fire Underwriters.

Our legislation includes this section on flammable liquids.

William Meinheit, Chief, Berkeley, Calif.: In order to prevent the storage of gasoline on the premises I believe an educational program should be carried on, as well as rigid inspections and the enforcement of existing codes with heavy penalties imposed on offenders.

Our fire prevention code specifically provides that no one can store more than one gallon of gasoline without written permission of the Fire Chief or action of the City Council. Quantities of from one gallon to five gallons must be kept in Underwriters' approved containers. Fifty gallon Underwriters approved buggies are allowed in certain occupancies. Tank storage is regulated by our fire prevention code, while situations not covered by our code are regulated by the National Board regulations. Heavy penalties are provided for violations.

Brooks McClure, Chief, Huntington, W. Va.: Our city passed an ordinance governing the handling of inflammable liquids, excerpts from which follow:

"It shall be unlawful for any person, firm or corporation to use Class 1 or Class 2 liquids in an open container unless there is a special

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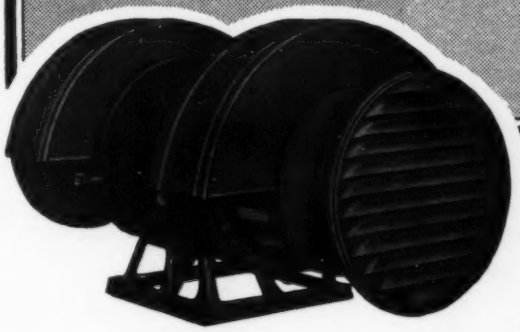

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You Can Depend On It *ALWAYS*

These are days of positive action. Now is the time to prepare for future eventualities, whether they be "Fire Alarms" or "Air Raids." Give your community the best possible protection you can. . . . Give it "Sterling Protection." Sterling Sirens are always ready for emergencies day or night. In the regulated, shrill vibrations of the STERLING SIREN ALARM you have the answer to both the fire alarm and air raid housed in one piece of equipment.

Oldest and Largest Exclusive Makers of Siren Signals

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CAIRNS

Regulation Style

SOLID TOP

Drop Brim Style

HELMETS

With CUSHION LINING

Only the best grain leather—proved by long service to be the most durable material for helmets—is used. Two shaped pieces form the skull. Combs or ribs are steel-reinforced and securely stitched in place. Two weights (heavy and medium) and two styles (illustrated above) are available. These rugged, life-time helmets are used in many Government fire departments, as well as in countless municipal departments in U. S., Canada, and neighbor nations to the south. No "critical materials" are employed—you conserve for Victory when you order these sturdy leather helmets. Write for Catalog 30-A.

A flexible ring inside the lining moulds itself to the head-shape, grips firmly without pressure, insulates, absorbs shocks, and can be removed for cleaning.

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Outfitters to Firemen Since 1836

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FIRE HOSE

FLAT FOLDING
—easier to handle
PRESSURE TESTED
—every length tested
under *high pressure*
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Also made
RADIO-ACTIVE
TREATED
Mildew-Proof • Rot-Proof
Freeze-Proof
Look for the green color

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THE MANHATTAN RUBBER MFG. DIVISION
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Executive Offices and Factories . . . Passaic, N. J.

FULL, FREE WATERWAY

Maximum nozzle pressure is an engineered feature of the Mueller-Columbian Fire Hydrant. The extra large diameter of the hydrant barrel, the absence of any obstructions to impede the flow of water, and the long radius sweep from the hydrant barrel to the hose and steamer nozzles eliminate the weak and restricted stream often encountered with the ordinary hydrant. There is very little frictional loss with the Mueller-Columbian Fire Hydrant.

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CHATTANOOGA, TENN.

room, construction to be of fire resistive material inside and out from ceiling to floor, and also with a ventilator for vapors or fumes to be carried to the outside of building. This applies where there are people living over place of business or where the premises are considered a bad fire hazard by the Fire Inspector.

"Any person, firm or corporation selling Class 1 and Class 2 liquids shall be required to have a fire extinguisher which has been approved for extinguishing the above liquids.

"Any person, firm or corporation or the head of any firm or corporation found guilty of any act declared by the foregoing section shall be punished by a fine of not less than $10.00 and not more than $50.00 or subject to both fine and imprisonment not to exceed 30 days.

"After due notice has been given each day shall constitute a separate violation and shall be subject to a fine of $5.00 per day until provisions of this act are complied with."

Albert Krenz, Chief, Clinton, Ia.: We have an ordinance which allows people to store 50 gallons of gasoline in a barrel in a storage place around a private residence.

Otto Beutell Dead

Otto Beutell, New Jersey representative of the American-LaFrance-Foamite Corporation, died at his home in Red Bank, N. J., on Friday, July 3. Mr. Beutell had been with the company for over thirty years, and was well known in fire department circles throughout the country. He leaves a widow and a married daughter to survive him.

New Louisiana Fire Marshal Discharges Entire Staff

Discharge of every employee of the Louisiana State Fire Marshal's office has been effected by Fred C. Parker, Jr., of Baton Rouge, following confirmation of his appointment to the position by the State Senate. Mr. Parker succeeds the late C. P. Fournet. The first person discharged was Jack McCarthy, Chief Deputy. Nine deputies and four stenographers in the New Orleans office, as well as nine deputies in areas throughout the State, were let go.

Rector Chief at Grosse Pointe Park

Edward L. Rector was appointed Chief of the Grosse Pointe Park, Michigan, Fire Department on May 1 to succeed Chief Richard Holme who retired.

Chief Rector started as a pipeman with the Grosse Pointe Park Fire Department in November, 1924, previous to which time he was a member of the Detroit Fire Department. He became a captain in 1925, Assistant Chief in 1929 and Chief on May 1, 1942.

The Chief is a past President of the Southeastern Michigan Fire Chiefs' Association and a member of the International Association of Fire Chiefs. He has successfully taken two courses in firemanship at the University of Michigan and is legally qualified to teach Fire Department Technique in the public schools of Michigan.

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PORTABLE
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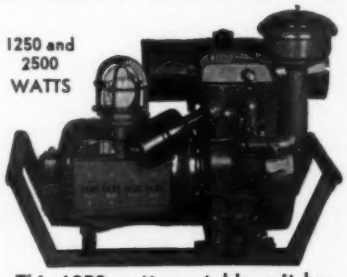
1250 and 2500 WATTS



This 1250 watt, portable unit has been designed expressly for fire department use. It is small, light, compact and equipped with carriers for easy portability out on the job. Air-cooled 4-cycle engine 2⅝" bore x 2⅝" stroke. 2.4 H.P. 2 gallon fuel tank. Quick starting. Also 2500 watt size.

LARGER SIZES AVAILABLE
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USE Shuredry
SALVAGE COVERS

Control loss from water damage

Never before have people been so conscious of the importance of adequate equipment for fighting fire.

With Shuredry Salvage Covers and thorough drill in their use as covers and catchalls you can improve your department's record. Light and easy to handle—they do not freeze even at very low temperatures. Shuredry salvages will not crack when folded for storage.

Write for information and prices.

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Manufacturers since 1870
Atlanta St. Louis Dallas Minneapolis
New York New Orleans Kansas City, Kan.

Eastern Chiefs Meet

The Eastern Association of Fire Chiefs held a highly successful convention on June 25-27 at Reading, Pa. Over two hundred fire chiefs were present.

The technical program centered around national defense and proved interesting and instructive. Secretary Charlie Clark did a fine job in assembling the talent included in the program.

Some of the highlights of the program were papers by J. Jack Weiss, Chief of the Philadelphia Navy Yard Fire Department; Battalion Chief F. J. G. Wedemeyer, of New York, describing London bombings (read by President Waldron in his absence); and Special Agent E. R. Davis, Federal Bureau of Investigation, who spoke on "Fifth Column Threat."

Officers elected for next year were:

President, Edward H. Warr, Chief of Fire Insurance Salvage Corps, Baltimore, Md.; First Vice-President, William J. Lutz, Chief, Wilmington, Del., Second Vice-President, Frank Deen, Assistant Chief, Lancaster, Pa.; Secretary, Charles E. Clark, Wayne, Pa., and Treasurer, George L. Mitchell, ex-Chief, East Orange, N. J.

The 1943 Conference will be held at Baltimore.

Feldspar Used to Extinguish Incendiary Bombs

A cheap and easily obtainable material effective in extinguishing magnesium incendiary bombs has been found by the Geological Survey in feldspar, Secretary of the Interior Harold L. Ickes announced recently.

The Geological Survey has long sought a solution which would involve the least expenditure for equipment or material supplies, and yet be as nearly foolproof as possible in handling. In the use of feldspar, ground to pass a ten-mesh screen and be retained by a 200-mesh screen, geologists and chemists of the Survey believe they have found an answer to the problem of extinguishing incendiary bombs.

With a lower melting point than sand, feldspar quickly forms a protective coating over molten magnesium which cuts off the supply of air from the magnesium and actually stops it from burning and its flame from spreading. In laboratory experiments, it was shown that when magnesium or an incendiary bomb was ignited and placed on a pine floor or board and covered with ground feldspar, the fire was extinguished so quickly and the supply of oxygen was cut off so effectively that the wood was charred only to a depth of less than half an inch. Moreover, only about fifty per cent of the magnesium was consumed in most tests with feldspar, the balance being put out before it burned.

Account of Chicago Fire Published

An account of the Great Chicago Fire of 1871 by H. A. Musham, Naval Architect and Research Engineer of Chicago, appears in a publication entitled "Papers in Illinois History and Transactions for the Year 1940," which is published by the Illinois State Historical Society, Springfield, Ill. Copies may be secured from that organization at the price of $2.00 each.

THE VERSATILE *Emergency* TOOL

HKP

FIREMAN'S CUTTER

Here is a high-speed, heavy-duty "hot" line cutter—with important secondary uses.

Has Cohardite insulation moulded onto the handles — a safety measure against abrasion and puncture — each pair of handles thoroughly tested before shipment to withstand 20,000 volts. Jaws easily cut ½" solid copper wire and open out to 1⅛" to admit heavily insulated wire. Its special search hook helps find and guide wires into the cutting jaws in smoke and darkness.

In fire-fighting, wreckage clearance and rescue work this tool is quick, efficient and dependable.

Tested by many years of service in municipal fire departments throughout the country, the HKP Fireman's Cutter is specifically designed to fulfill the requirements of Civilian Defense. It is a worthy member of the famous line of Porter Metal Cutters.

SEND FOR **FREE** DESCRIPTIVE FOLDER

It's free, of course.

H. K. PORTER, INC. *EVERETT, MASS.*

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Specify . . .

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FIRE HOSE COUPLINGS and FITTINGS

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POWHATAN BRASS and IRON WORKS

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YOUR HOSE KNOWS and SHOWS!

Patent Pending

Don't risk damage to your hose lines by closing down charged lines with obsolete style hose clamps or by kinking the hose. Go modern, play safe — use a PRESSURE MASTER HYDRAULIC to completely stop the flow of water at any point on the line and at any pressure. You can't go wrong with such features as you will find only in the PRESSURE MASTER —

1. **10 second action, positive control at any desired pressure.**
2. **One-man operation at any pressure up to 300 pounds or over.**
3. **Easily carried—weighs only 20 pounds.**
4. **Running-board mounting available.**
5. **CORRECT design eliminates stress on folds of hose giving positive protection against injury.**
6. **Fire department red finish baked on.**
7. **Economically priced.**

Every fire truck should carry a PRESSURE MASTER. Send for four-page folder.

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Our coats are giving excellent satisfaction in most of the large fire departments throughout the U. S. and

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We also manufacture White Striped Safety Coats.

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Chief Willis Dies

Chief Luther P. Willis of the Pueblo, Colo., Fire Department, died suddenly on May 30 from a heart attack, despite the efforts of the Department's first aid squad to save his life.

Less than two hours before his death he answered a fire alarm and directed his men in fighting a minor blaze. It was believed that a possible contributing factor in his sudden death might have been his inhalation of large quantities of smoke at this fire.

Chief Willis joined the Fire Department in 1893. He served as fireman and Captain until his appointment as assistant fire chief on October 13, 1922. He held that position until August 1, 1932, when he was appointed Chief.

A strong proponent of first aid and rescue work by firemen, Chief Willis was instrumental in the development of the local department's first aid and rescue squads. It was under his direction that the present first aid truck and equipment was developed.

Several innovations were adopted under Chief Willis' regime, including the changing of the fire department equipment's color from red to white. He also constantly urged the City Council to purchase first-line equipment and many of the most modern pieces of apparatus were purchased on his recommendation.

May Fire Loss

Fire losses in the United States during May were $23,233,000, according to the estimate given out by the National Board of Fire Underwriters. These estimated losses, under fire insurance policies, are on an incurred basis, including an allowance for unreported and uninsured losses.

The May losses show a sharp drop from those in May last year, the total of $23,233,000 comparing with $25,637,000, a decline of $2,404,000 or nine per cent. Despite the decline in each of the last three months, the aggregate for the year is still greater than that for the first five months of 1941 because of the heavy losses in January and February, the total of $148,082,000 being seven per cent greater than the $139,010,000 reported for the same period last year.

Losses in May were very much lower than those in April of this year, the decline amounting to $4,727,000, or seventeen per cent.

Church Has Two-Alarm Fire

A two-alarm fire attacked the sacristy of Old St. Mary's Church, California Street and Grant Avenue, San Francisco, Cal., shortly before five a.m. on Sunday, April 26.

The church, a red brick building erected many years before the earthquake and fire of 1906 is on the edge of Chinatown and the swanky Nob Hill districts.

The fire started near the fuse box of the building and apparently had been smoldering for some time before the flames actually broke out. The blaze filled the church with so much smoke that the first three masses of the day had to be said in the parish house.

Workmen cleared the debris while later masses were being said in the church. Cause of the fire was not determined.

BOB GREENOCK.

THE "ALL-OUT" FIRE EXTINGUISHER

A MODERN WEAPON for DEFENSE against TODAY'S FIRE HAZARDS

ADVANTAGES

- IMMEDIATE EXTINGUISHER ACTION
- NON-POISONOUS — NO DANGEROUS GASES
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- LIGHTWEIGHT — EASY TO HANDLE
- WILL NOT FREEZE, EVAPORATE OR CORRODE
- NO PROFESSIONAL SERVICING REQUIRED

Fire fighting authorities know that an extinguisher effective upon one type of fire may prove useless upon another. This is the explanation of why so many fires gain disastrous headway. The ALL-OUT extinguisher can be depended upon to operate effectively and safely at all times.

Distributors Wanted

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IMPROVED INCENDIARY BOMB PUMP

Designed for extra sturdiness and maximum efficiency

The two cylinders provide constant quick pressure on both the up and down stroke. All working parts accurately machined, including the two-way slide type nozzle, for mist spray or straight spray.

Other type bomb pumps of larger size with containers complete also manufactured, as well as fire hose nozzles, wheels, plugs, caps, etc.

The CAMPBELL-HAUSFELD COMPANY
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Chief Brennan Collapses at Fire

In the midst of directing a battle against a three-alarm fire which swept through four industrial buildings at Eighth and Harrison Sts., San Francisco, on June 10, Fire Chief Charles Brennan suffered a severe heart attack. However, despite intense pain, Chief Brennan insisted upon remaining at the scene of the fire until it was brought under control.

It was only then that Assistant Chief Albert J. Sullivan was able to persuade him to enter an ambulance which took him to the Central Emergency Hospital where he received first aid. He was then removed to St. Francis Hospital where his physician, Dr. George Boskowitz, announced that the chief's collapse had been due to a heart ailment, traced to overwork.

"For the last year," said the doctor, "Chief Brennan has been occupied with defense work in addition to his regular, arduous duties. It is too early for a definite prognosis, but he should be able to leave the hospital within a few weeks."

The chief's collapse came on the heels of a special bond election for which he had campaigned vigorously. The election, overwhelmingly approved by the city's voters, provided for $1,250,000 in bonds with which to install an auxiliary water supply system and pumping station at Lake Merced on the southern edge of the city. The auxiliary system would supply water for both fire fighting and civilian use in case of emergency.

Equally important, the election provided bonds in the amount of $3,000,000 to be used for the immediate purchase of much needed auxiliary fire equipment.

The fire was discovered by Policeman Thomas Barry who pulled Box 2331 at Ninth and Brannan Sts. at 3:31 a.m. "The flames seemed to break out in all the buildings simultaneously," he said later.

Chief Brennan, who took in the box on the first alarm because it is in the industrial district, was directing first alarm firemen and had just ordered the second alarm at 3:35 when he collapsed. In intense pain, he ordered a third alarm sounded at 3:37 and then insisted on remaining at the fire.

Two other firemen, Patrick Ganley, and Jack Sutter, were painfully injured when a wall fell.

Badly damaged in the $75,000 blaze were the California Glass and Rags Co., 520 Eighth St., the Consolidated Scrap Iron Co., 540 Eighth St., the Ocean Shore Iron Works, 550 Eighth St., and the Thompson Bros. Draying Co., 1045 Brannan St.

Fourteen trucks in the drayage plant and three boxcars on a railroad siding were destroyed.

A special call at 4:11 a.m. brought a water tower to the scene when it was found that heat from the fire was so intense that the firemen could not get in at it.

Cause of the fire was not immediately determined and an investigation was started at once by Chief Frank P. Kelly of the Fire Prevention Bureau.

Some officials were inclined to think that the blaze started in the tons of rags and old papers, bundled and stored in the glass and rag plant.

BOB GREENOCK.

Instant help for burns of all types with **TANNIN-GLYCEROL LOTION**

Instant application to first degree burns gives soothing relief, allows you to remain on duty. At the same time, Tannin-Glycerol helps reduce danger of infection and subsequent scarring. Used effectively in hospitals for its therapeutic ability to cut down recovery time. Take no chances. Apply Tannin-Glycerol instantly to all burns and as an aid against the effects of gases, vapors, heat and fumes. One ounce covers the body surface of a 150 pound man. Comes in 1 ounce to 1 gallon sizes.

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37 HARTFORD STREET, BOSTON, MASSACHUSETTS

2" and 2½" female threads

Modernize Your Fire Apparatus with ROSS* RELIEF VALVES

THEY are marvels in simplicity and adjustability, very rugged, responsive and most dependable.

Made in sizes from 1 inch to 2½ inches.

Capacities up to 1,600 g.p.m. and pressures up to 750 lbs. Send for descriptive literature covering the complete line of ROSS Relief Valves.

* Note—Make certain you get the genuine, look for the name "ROSS" on the top of every genuine Ross valve.

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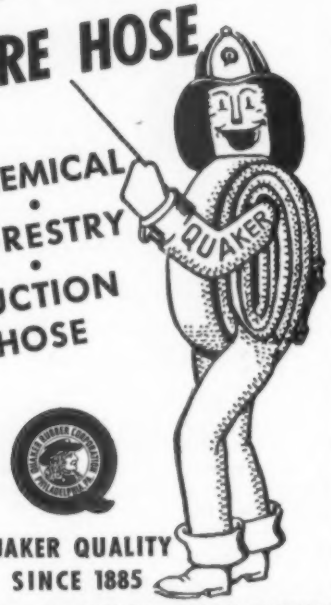

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National Board Elects Officers

Peter J. Berry, President of the Security Insurance Company of New Haven, Connecticut, was elected Secretary, and all other officers were re-elected at the 76th annual meeting of the National Board of Fire Underwriters at the Waldorf-Astoria Hotel, New York, on May 27. Mr. Berry succeeds the late Sumner Ballard, who served as Secretary of the Board for twenty-one years until his death last October.

Other officers of the National Board are: President, Robert P. Barbour, United States Manager, Northern Assurance Company, New York; Vice President, John M. Thomas, President, National Union Fire Insurance Company, Pittsburgh; Treasurer, B. M. Culver, President, Continental Insurance Company, New York; General Manager, W. E. Mallalieu; and Assistant General Managers, Charles H. Lum and G. S. Dauwalter.

The Home Insurance Company of New York, and its affiliated fire insurance companies, rejoined the National Board of Fire Underwriters at the meeting. Application for membership in the National Board was made by Wilfred Kurth, Chairman of the Board of the Home Group. The election of the Home and its affiliates was unanimous. The Home was a member of the National Board until eight years ago.

In his application for membership, Mr. Kurth said he felt that the insurance business should present the same type of unity that the country, as a whole, is showing in the war effort.

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A MODERN and PROVEN
LIFE NET

The SUPERIOR LIFE SAVING NET is stronger than any other, because of the tested breaking strength of 1,800 lbs. of each individual rope.

The direct pull shock absorber system eliminates all friction and its greater resiliency provides for a safer, easier landing.

Made of Chrome Molybdenum steel, the frame may easily be folded for storage within a few seconds.

For the utmost in LIFE SAVING VALUE . . . "SPECIFY SUPERIOR".

For ECONOMY, have your old net converted into a "SUPERIOR".

Other SUPERIOR Products:
Training Nets and Structures
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NATIONAL DEFENSE DEMANDS EFFICIENCY

Get the light into those small, dark corners where the danger lies and where the big "floods" don't get. Here is one of the handiest and most efficient electric lanterns ever made. This FOCAL-RAY lantern with its "All-Position" pivot base really does the job !!! Light in weight and economical to operate. 60 to 80 hours on one standard 6-volt lantern battery.

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THE METAL WARE CORPORATION
TWO RIVERS, WISCONSIN
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Fire Marshal Brophy Celebrates Anniversary

Thomas Patrick Brophy, Chief Fire Marshal of New York, recently celebrated the thirty-fifth anniversary of his association with the New York Fire Department. After serving as an assistant fire marshal for some time, he was promoted to fire marshal in charge of Brooklyn and Queens. Since 1915 he has been Chief Fire Marshal in charge of the entire city.

Chief Brophy has probably investigated more fires and explosions than has any other man in the world and he has been instrumental in sending many incendiaries to prison.

Fund Approved for Fire Program at Canton

An ordinance appropriating $170,900 for a rehabilitation program in the Canton, Ohio, Fire Department was passed by the city council recently.

The rehabilitation program, as proposed by Chief George E. Jacob, would include construction of two new buildings to replace two present houses which are in bad condition and are poorly located, together with the construction of an additional station.

It also includes new equipment estimated to cost $48,400, of which $41,450 would go for three new pumpers and a "quad" truck; sixty new fire hydrants, thirty new fire alarm boxes and replacement of fifty-six obsolete boxes, new fire hose, furniture and fixtures and repairs to other engine houses.

AMERICAN ALL-WEATHER COATS

USED BY FIRE DEPARTMENTS IN EVERY STATE IN THE U. S.

An all - weather coat, sold either with or without the detachable liner. Detachable liner is ideal for fire fighting in zero weather.

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AMERICAN RAINCOAT CO.
MARENGO - - ILLINOIS
Established in 1927

Defense Workers *need* PROTECTION TOO!

Priorities and efficiency demand and get protection for the vital machinery and equipment so necessary to the war effort, but in many cases the protection of defense workers, both in the plants and housing facilities, are ignored or overlooked.

Mr. Chief, you can do your part in securing protection for these workers, by suggesting the installation of POTTER SLIDE FIRE ESCAPES on all defense plants and housings in your community. These escapes are safe and easy to use. Many hundreds of lives have been saved every year by their use. Lives thus saved are as important to the war effort as is the saving of the machinery they use!

The recommendations of our experienced engineers are yours for the asking, without any obligation to you.

Write for detailed literature.

Potter Mfg Corp
SLIDE FIRE ESCAPES

James A. Flynn, Pres.
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CHICAGO ILLINOIS

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for...

FIRE APPARATUS and FIRE DEPARTMENT SUPPLIES

BOYER FIRE APPARATUS CO.
LOGANSPORT - - INDIANA

Pittsburgh Fire Fighters Receive Increase in Salary

Effective early this year, the uniformed fire fighting force of the Pittsburgh Bureau of Fire, except the Chief of Department, the two Senior Battalion Chiefs and ten Battalion Chiefs, received an increase in salary, the amounts rating from $120 per year to $146 per year, while the clerical force in the General Office of the Bureau received an increase of 5 per cent in salary.

The increases in salaries are as follows: 122 Captains, from $2,700 to $2,835 or $135 per year, and two Training School Instructors, from $2,920 to $3,066 or $146 per year.

The entire number of 712 Hosemen and Laddermen in the Fire Bureau received an increase of $10 per month or $120 per year, as follows: Seventh year grade, from $2,310 to $2,425 per year; Sixth year grade, from $2,200 to $2,310; Fifth year grade, from $2,090 to $2,194; Fourth year grade, from $1,980 to $2,079; Third year grade, from $1,870 to $1,963; Second year grade, from $1,760 to $1,848 and the First year grade, from $1,650 to $1,732.

The salary of the Chief Clerk of the Fire Bureau was increased from $2,530 to $2,650 per year, one Record Clerk from $1,780 to $1,869; one Stenographer-Clerk, from $1,670 to $1,753 and one Storekeeper from $1,650 to $1,732 per year.

During the time City Council was making up the budget for 1942, a committee of International Association of Fire Fighters, representing the uniformed fire force, appeared before Council for a hearing, with a request that the salaries of the firemen, as of January 1st, 1931, be restored in full, at which time the salaries of all city employes reached their highest peak in history, but this request was refused, and Council closed the budget, without giving this request any consideration, allowing only the increases as set forth above.

During the depression years, salaries of all city employes were cut 16⅔ per cent by City Council, effective January 1st, 1933, of which amount of cut, 10 per cent was restored, effective January 1st, 1935.

A committee of the Pittsburgh City Employes Local, No. 239, of the American Federation of State, County and Municipal Employes, representing all city employes, other than the uniformed Fire and Police Departments, appeared before Council with a request for a 20 per cent increase in salaries, but a 5 per cent increase was all that most of the city employes received.

WILLIAM E. PATTERSON.

Underwriters' Laboratories Chief Electrical Engineer Joins the W. P. B.

Robert B. Shepard, Chief Electrical Engineer of Underwriters' Laboratories, Inc., has been appointed Deputy Chief of the Simplification Branch of the Bureau of Industrial Conservation of the War Production Board and is now in Washington, D. C.

Mr. Shepard's work will involve contacts with other divisions and bureaus of the W. P. B., particularly the industry branches; also contacts with divisions of the O. P. A., the Army, the Navy, lease-lend, etc.

SEE HOW NICE IT FITS..!
ONE PIECE ONE MOVE
and Your Face Is
COMPLETELY COVERED!

Cases No. 605

HEALTHGUARD MASK

★ You can see by the above illustration how snugly the Healthguard Mask fits your face.

This mask may be worn for protection from wood smoke and numerous acid fumes and gases, by simply changing from one cartridge to another. Not a single dissatisfied user among hundreds now wearing this Healthguard Mask. Comes packed in a neat metal carrying case.

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HELP DEFEND YOUR COMMUNITY

BY COOPERATING FULLY WITH YOUR LOCAL CIVIL DEFENSE ORGANIZATION

LET'S ALL REMEMBER — "IT CAN HAPPEN HERE". GUARD AGAINST SABOTAGE AND FIRES DUE TO NEGLIGENCE OR CARELESSNESS.

BE ON THE ALERT— ALWAYS

Fire Chiefs Everywhere Find 100% Water Control by Using the **COLT** Shut-Off Nozzle — the Nozzle That Is Built To Last. Specify **COLT** Shut-Off Nozzles When You Order Your New Additional Equipment and Treat Yourself to the Best.

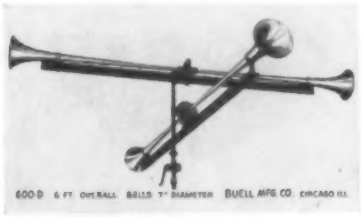
EXCELSIOR BRASS MFG. CO.
3452-54 N. Knox Ave., Chicago, Ill.

Mfrs. of the **COLT** Nozzle and Fire Dept. Brass Goods for Nearly 30 Years

Manufacturers' Announcements

Air Raid Warning Signals

The Buell Manufacturing Company, 2975-77 Cottage Grove Avenue, Chicago, Ill., has recently issued a release describing the various types of air raid warning signals which they manufacture.



Type 600-D

The Buell 600-D, illustrated herewith, is a signal that with but two simple units gives ample coverage in four directions. It has four horns instead of two. The horns may be of the same pitch or if one is of a high pitch, a distinctive toned combination that would not be confused with any other signal results. This type has proven effective where a pleasing chime was confused with other signals. It is recommended that these units be spaced at intervals of one mile in residential districts and one-half mile in business districts. The units may be operated from a central control, if desired, by means of electric solenoid valves.

Incendiary Bomb Extinguisher

The O. H. Adams Company, 2018 East Thomas Avenue, Milwaukee, Wis., are distributing an extinguisher of incendiary bombs called "Bomb-Quench." It comes in a tube sixty inches long, allowing one to stand five feet from the fire for ample protection.

To use the extinguishing compound, it is only necessary to remove the top from the tube carton and to sprinkle free flowing Bomb-Quench over the burning bomb or magnesium fire.

Should the fire be on a wood floor or other combustible surface, it should be covered with the compound, followed immediately with a layer beside the fire. The molten mass should be shoveled onto the layer of the extinguisher, without breaking the crust, and allowed to cool.

New All-Spray Nozzle Eliminates Solid Stream

To meet the demands for a variable, all-spray Nozzle, without a straight stream, a new water spray nozzle, the "Alfco-spray," has just been introduced according to the manufacturer, American-LaFrance-Foamite Corporation, Elmira, N. Y. From the shut-off position, a slight turn of the tip immediately gives a cone spray of forty degrees. Further slight rotation produces increasing cones up to full curtain of 150 degrees, with reversal back to shut-off without any intervening solid stream. This model finds favor with many public utility companies, as it prevents any possibility of a solid water stream being applied inadvertently on live electric circuits. The varying cones are also excellent for extinguishment of heavy oil fires, and for general cooling purposes.

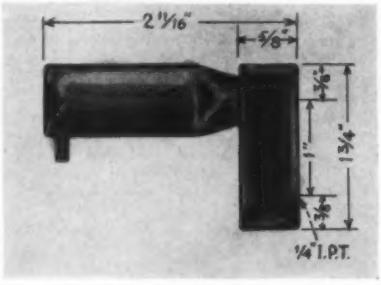
In the forty degree spray position, the capacity is about ninety-five gallons per minute and 135 gallons per minute at fifty pounds and 100 pounds inlet water pressures respectively. The full curtain capacity at these pressures is approximately 170 gallons per minute and 215 gallons per minute.

Wall Cards on Care of Rubber Hose

In the interest of rubber conservation, two useful wall cards on the proper care of hose have been prepared by The Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., Passaic, N. J., and are now ready for distribution. One of the cards is devoted to the proper care of fire hose, and the other lists rules for the proper care of air, water, steam and other types of rubber hose and for proper attaching of couplings. Both cards are 8¼ inches by 11 inches and have an eyelet for convenient hanging. They may be obtained on request.

Hale Pump Builds Pitot Tube

The Hale Fire Pump Company, of Conshohocken, Pa., recently placed on the market pitot tubes for determining hydrant and nozzle pressures. Both tubes were designed by the Hale Company.



Nozzle Pitot Tube

The illustration herewith shows the nozzle pitot tube, with dimensions. The hydrant tube is the same with the exception of the tube cylinder, which is 5 15/16 inches in length instead of 2 11/16 inches as with the nozzle pitot tube. The blade is pressed from round one-half inch copper tubing.

Installations of Circul-Air Hose Dryers

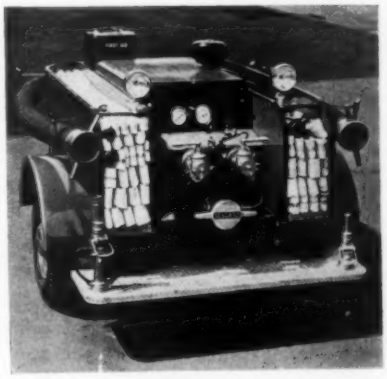
The Circul-Air Corporation has recently installed their hose drying equipment in a number of manufacturing companies, government plants and cities.

Equipment has been installed in the Ford Bomber Plant, the Chrysler Tank Arsenal, the DuPont Company, Western Electric, the Glenn L. Martin Aircraft Company and the Hercules Powder Company. Government installations include the Watervliet, N. Y., arsenal, Fort Belvoir, Va., three or four ordnance works and the bases at Dutch Harbor, Newfoundland, and Puerto Rico.

Cities which have received this equipment include Los Angeles, Cal.; Nyack, N. Y.; Albany, N. Y.; White Plains, N. Y., and Hingham, Mass.

Sealand Trailer Pumps

The Sealand Corporation of Saugatuck, Connecticut, recently delivered to the Bullard Company, machine tool manufacturers of Bridgeport, Conn., the first of several fire pumper trailer units, which are to be used for plant fire protection. Sealand units are particularly suited for this service, because they can be easily moved manually to the scene of operation or can be towed by plant tractor or automobile.



Sealand Trailer Unit

Montgomery Made Honorary Chief of Sturgis, South Dakota

W. H. Montgomery, Sales Representative for American-LaFrance-Foamite Corporation in North and South Dakotas, was honored by Chief E. O. Sinclair and the members of the Sturgis, S. Dak., Fire Department on May 15, 1942, by being made Honorary Chief of their department and being presented with a gold badge engraved "Honorary Chief Sturgis Fire Department."

Chief W. H. Montgomery

The title is not new to "Chief" Montgomery, as he served as Chief of the

(*Continued on page* 488)

WHERE TO BUY

A HANDY LIST OF REPUTABLE MANUFACTURERS

FOR EASY REFERENCE WHEN YOU'RE IN THE MARKET FOR NEW FIRE EQUIPMENT

(Page number following each name refers to advertisement in this issue)

ALARM SYSTEM EQUIPMENT

Boxes

American District Telegraph Co. (*p. 394*)
Federal Electric Co., Inc. (*p. 383*)
Gamewell Co. (*Inside Front Cover*)
Harrington Signal Co. (*See Last Issue*)

Central Station Equipment

American District Telegraph Co. (*p. 394*)
Federal Electric Co., Inc. (*p. 383*)
Gamewell Co. (*Inside Front Cover*)
Harrington Signal Co. (*See Last Issue*)

Loud Speakers, Fire Station

Gamewell Co. (*Inside Front Cover*)

Sirens & Whistles (Air Raid Warning)

American-LaFrance-Foamite Corp. (*p. 390-391*)
Buell Mfg. Co. (*p. 476*)
Buckeye Iron & Brass Works (*p. 466*)
Federal Electric Co., Inc. (*p. 383*)
Foster Engineering Co. (*p. 397*)
Gamewell Co. (*Inside Front Cover*)
H. O. R. Company, Inc. (*p. 406*)
Sterling Siren Fire Alarm Co., Inc. (*p. 479*)

Tape Systems

American District Telegraph Co. (*p. 394*)
Federal Electric Co., Inc. (*p. 383*)
Gamewell Co. (*Inside Front Cover*)

BADGES, INSIGNIA, etc.

American-LaFrance-Foamite Corp. (*p. 390-391*)
C. G. Braxmar Co. (*p. 404*)
Cairns & Bro. (*p. 479*)
Wentworth-Fornian Co., Inc. (*p. 478*)

BATTERY CHARGERS

Briggs & Stratton Corp. (*p. 494*)
General Electric Co. (*See Last Issue*)
Harrington Signal Co. (*See Last Issue*)

BRAKES, AIR

Bendix-Westinghouse Automotive Air Brake Co. (*p. 470*)

COAL TAR PITCH

(For Fighting Magnesium Fires)

Reilly Tar & Chemical Corp. (*See Previous Issues*)
Soilicide Laboratories (*p. 465*)

CUTTERS, BAR, CHAIN, CABLE, WIRE

American-LaFrance-Foamite Corp. (*p. 390-391*)
Dayton Fire Equipment Co. (*p. 478*)
F. N. McIntire Brass Works (*p. 473*)
Peter Pirsch & Sons Co. (*Inside Back Cover*)
H. K. Porter, Inc. (*p. 481*)

DOOR OPENERS, FIRE STATION

American-LaFrance-Foamite Corp. (*p. 390-391*)
Elkhart Brass Mfg. Co. (*p. 401*)
Wooster Brass Co. (*p. 460*)

EJECTORS AND EXHAUSTERS, SMOKE

Homelite Corp. (*p. 467*)
Peter Pirsch & Sons Co. (*Inside Back Cover*)
Ward La France Truck Corp. (*p. 397*)

ELECTRIC POWER GENERATORS, PORTABLE

American-LaFrance-Foamite Corp. (*p. 390-391*)
Briggs & Stratton Corp. (*p. 494*)
Homelite Corp. (*p. 467*)
United States Motors Corp. (*p. 480*)

EXPANDERS, COUPLING AND HOSE

American-LaFrance-Foamite Corp. (*p. 390-391*)
Buckeye Iron & Brass Works (*p. 466*)
Dayton Fire Equipment Co. (*p. 478*)
Excelsior Brass Mfg. Co. (*p. 485*)
Wooster Brass Mfg. Co (*p. 460*)

EXTINGUISHERS

American-LaFrance-Foamite Corp. (*p. 390-391*)
Buffalo Fire Appliance Corp (*p. 412*)
C-O-Two Fire Equipment Co. (*p. 408*)
Elkhart Brass Mfg. Co. (*p. 401*)
National Powder Extinguisher Corp. (*p. 482*)
D. B. Smith & Co. (*p. 393*)
Victor Industries (*p. 468*)
Ward La France Truck Corp. (*p. 397*)

FIRE DEPARTMENT SUPPLIES, MISCELLANEOUS

Akron Brass Mfg. Co., Inc. (*p. 405*)
American-LaFrance-Foamite Corp. (*p. 390-391*)
Bi-Lateral Fire Hose Co. (*See last issue*)
Boyer Fire Apparatus Co. (*p. 485*)
Buckeye Iron & Brass Works (*p. 466*)
Buffalo Fire Appliance Corp. (*p. 412*)
Cairns & Brother (*p. 479*)
Campbell-Hausfeld Co. (*p. 482*)
Dayton Fire Equipment Co. (*p. 478*)
Duo-Safety Ladder Corp. (*p. 385*)
Elkhart Brass Mfg. Co. (*p. 401*)
Excelsior Brass Mfg. Co. (*p. 485*)
Fire Appliance Co. (*p. 463*)
Fog Nozzle Co. (*Back Cover*)
H. O. R. Co., Inc. (*p. 406*)
F. N. McIntire Brass Works (*p. 473*)
Peter Pirsch & Sons Co. (*Inside Back Cover*)
Powhatan Brass & Iron Works (*p. 481*)
Superior Fire Equipment Co. (*p. 484*)
Ward La France Truck Corp. (*p. 397*)
Wooster Brass Co. (*p. 460*)

FIRE DETECTORS

American District Telegraph Co. (fixed installation) (*p. 394*)
Carpenter Mfg. Co. (hand operated) (*p. 471*)
C-O-Two Fire Equipment Co. (*p. 408*)
Gamewell Co. (fixed installation) (*Inside Front Cover*)
Victor Industries (fixed installation) (*p. 468*)

FIRE ESCAPES

Morrissey Mfg. Co. (*p. 472*)
Potter Mfg. Corp. (permanent, tubular & spiral slide type) (*p. 485*)

FIRE BLANKETS

Mine Safety Appliances Co. (*p. 388*)

FIRST AID EQUIPMENT

Akron Brass Mfg. Co., Inc. (*p. 405*)
American-LaFrance-Foamite Corp. (*p. 390-391*)
E. & J. Mfg. Co. (*p. 395*)
J. H. Emerson Co. (*p. 477*)
Lanyard Chemicals Incorporated (*p. 483*)
Mine Safety Appliances Co. (*p. 388*)

FLOODLIGHTING EQUIPMENT

American-LaFrance-Foamite Corp. (*p. 390-391*)
Carpenter Mfg. Co. (*p. 471*)
Homelite Corp. (*p. 467*)
Ward La France Truck Corp. (*p. 397*)

FOAM GENERATORS

American-LaFrance-Foamite Corp. (*p. 390-391*)
Peter Pirsch & Sons Co. (*Inside Back Cover*)

GAS INDICATORS AND DETECTORS

Mine Safety Appliances Co. (*p. 388*)

GAS MASKS, ALL SERVICE AND ALL PURPOSE

Acme Protection Equipment Co., Inc. (*p. 407*)
American-LaFrance-Foamite Corp. (*p. 390-391*)
Chicago Eye Shield Co. (*p. 485*)
H. S. Cover (*p. 478*)
Mine Safety Appliances Co (*p. 388*)

GAUGES, PRESSURE

American-LaFrance-Foamite Corp. (*p. 390-391*)
Victor Industries (*p. 468*)

GOGGLES

Cairns & Bro. (*p. 479*)
Chicago Eye Shield Co. (*p. 485*)
H. S. Cover (*p. 478*)
Mine Safety Appliances Co. (*p. 388*)

HELMETS

Acme Protection Equipment Co. (steel) (*p. 407*)
American-LaFrance-Foamite Corp. (*p. 390-391*)
Cairns & Bro. (*p. 479*)
Midwestern Mfg. Co. (*p. 400*)
Mine Safety Appliances Co. (*p. 388*)

HOSE

American-LaFrance-Foamite Corp. (*p. 390-391*)
Bi-Laterial Fire Hose Co. (*See Last Issue*)
Goodall Rubber Co. (*p. 402*)
Hewitt Rubber Corp. (*See Last Issue*)
Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc. (*p. 480*)
Quaker Rubber Corp. (*p. 484*)

HOSE BRIDGES

American-LaFrance-Foamite Corp. (*p. 390-391*)
Hale Fire Pump Co. (*p. 476*)

HOSE CABINET UNITS

Elkhart Brass Mfg. Co. (*p. 401*)

HOSE CARTS, REELS, RACKS

American-LaFrance-Foamite Corp. (*p. 390-391*)
Akron Brass Mfg. Co. (*p. 405*)
Boyer Fire Apparatus Co. (*p. 485*)
C-O-Two Fire Equipment Co. (*p. 408*)
Elkhart Brass Mfg. Co. (*p. 401*)
Peter Pirsch & Sons Co. (*Inside Back Cover*)

HOSE CLAMPS

American-LaFrance-Foamite Corp. (*p. 390-391*)
Akron Brass Mfg. Co., Inc (*p. 405*)
Elkhart Brass Mfg. Co. (*p. 401*)
Goodall Rubber Co. (*p. 402*)
Kellam Mfg. Co. (*p. 414*)
Morrissey Mfg. Co. (*p. 472*)
Peter Pirsch & Sons Co. (*Inside Back Cover*)
Pressure Master Co., The (*p. 482*)
Wooster Brass Co. (*p. 460*)

HOSE COUPLINGS, ADAPTORS WRENCHES

Akron Brass Mfg. Co. (*p. 405*)
American-LaFrance-Foamite Corp. (*p. 390-391*)
Elkhart Brass Mfg. Co. (*p. 401*)
Excelsior Brass Mfg. Co. (*p. 485*)
Goodall Rubber Co. (*p. 402*)
F. N. McIntire Brass Works (*p. 473*)
Pacific Marine Supply Co., Inc. (*p. 474*)
Powhatan Brass & Iron Works (*p. 481*)
Wooster Brass Co. (*p. 460*)

HOSE DRYERS

Circul-Air Corp. (*p. 468*)

HOSE EXPANDERS

Akron Brass Mfg. Co., Inc. (*p. 405*)
Buckeye Iron & Brass Works (*p. 466*)
Dayton Fire Equipment Co. (*p. 478*)
Elkhart Brass Mfg. Co. (*p. 401*)
Wooster Brass Co. (*p. 460*)

For information about products of any manufacturer not listed above, write to Readers Service Dept., FIRE ENGINEERING, 24 West 40th St., New York, N. Y.

WHERE TO BUY

A HANDY LIST OF REPUTABLE MANUFACTURERS

FOR EASY REFERENCE WHEN YOU'RE IN THE MARKET FOR NEW FIRE EQUIPMENT

(Page number following each name refers to advertisement in this issue)

HYDRANTS

Eddy Valve Co. (*p. 471*)
Ludlow Valve Mfg. Co. (*p. 410*)
Mueller Co. (*p. 480*)
M. & H. Valve & Fittings Co. (*p. 477*)
Rensselaer Valve Co. (*p. 409*)
Ross Valve Mfg. Co., Inc. (*p. 483*)
Waterous Co. (*p. 469*)

LADDERS

Metal

Duo-Safety Ladder Corp. (*p. 385*)
Peter Pirsch & Sons Co. (*Inside Back Cover*)
Seagrave Corp. (*p. 386-387*)

Wood

American-LaFrance Foamite Corp. (*p. 390-391*)
Buffalo Fire Appliance Corp. (*p. 412*)
Duo-Safety Ladder Corp. (*p. 385*)
Peter Pirsch & Sons Co. (*Inside Back Cover*)
Seagrave Corp. (*p. 386-387*)

LIFE BELTS

American-LaFrance-Foamite Corp. (*p. 390-391*)
Atlas Fire Equipment Co., Inc. (*See Previous Issues*)
Buckeye Iron & Brass Works (*p. 466*)
Cairns & Bro. (*p. 479*)
Dayton Fire Equipment Co. (*p. 478*)
Mine Safety Appliances Co. (*p. 388*)
Morrissey Mfg. Co. (*p. 472*)
Peter Pirsch & Sons Co. (*Inside Back Cover*)
Superior Fire Equipment Co. (*p. 484*)
Wooster Brass Co. (*p. 460*)

LIGHTS, LAMPS AND LANTERNS, HAND

American-LaFrance-Foamite Corp. (*p. 390-391*)
Carpenter Mfg. Co. (*p. 471*)
H. O. R. Co., Inc. (*p. 406*)
Koehler Mfg. Co. (*p. 475*)
Metal Ware Corp. (*p. 484*)
Mine Safety Appliances Co. (*p. 388*)
Wooster Brass Co. (*p. 400*)

LUBRICANTS

Macmillan Petroleum Corp. (*p. 396*)

MOTOR FIRE APPARATUS

Ladder Trucks, Aerial

American-LaFrance-Foamite Corp. (*p. 390-391*)
Boyer Fire Apparatus Co. (*p. 485*)
The Four Wheel Drive Auto Co. (*See Last Issue*)
Mack Mfg. Co. (*p. 389*)
Peter Pirsch & Sons Co. (*Inside Back Cover*)
Seagrave Corp. (*p. 386-387*)

Ladder Trucks, Quadruple

Boyer Fire Apparatus Co. (*p. 485*)
Buffalo Fire Appliance Corp. (*p. 412*)
The Four Wheel Drive Auto Co. (*See Last Issue*)
Mack Mfg. Co. (*p. 389*)
Maxim Motor Co. (*p. 491*)
Peter Pirsch & Sons Co. (*Inside Back Cover*)
Seagrave Corp. (*p. 386-387*)
Ward La France Truck Corp. (*p. 397*)

Triple Combination Engines

American-LaFrance-Foamite Corp. (*p. 390-391*)
Boyer Fire Apparatus Co. (*p. 485*)
Buffalo Fire Appliance Corp. (*p. 412*)
The Four Wheel Drive Auto Co. (*See Last Issue*)
Mack Mfg. Co. (*p. 389*)
Maxim Motor Co. (*p. 491*)
Peter Pirsch & Sons Co. (*Inside Back Cover*)
Seagrave Corp. (*p. 386-387*)
Ward La France Truck Corp. (*p. 397*)

Water Towers

American-LaFrance-Foamite Corp. (*p. 390-391*)
Peter Pirsch & Sons Co. (*Inside Back Cover*)
Seagrave Corp. (*p. 386-387*)

NETS, LIFE AND TRAINING

Atlas Fire Equipment Co., Inc. (*See Previous Issues*)
Superior Fire Equipment Co. (*p. 484*)

NOZZLES

Cellar

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American-LaFrance-Foamite Corp. (*p. 390-391*)
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Elkhart Brass Mfg. Co. (*p. 401*)
F. N. McIntire Brass Works (*p. 473*)
Wooster Brass Co. (*p. 460*)

Deluge Sets

Akron Brass Mfg. Co., Inc. (*p. 405*)
American-LaFrance-Foamite Corp. (*p. 390-391*)
Elkhart Brass Mfg. Co. (*p. 401*)
F. N. McIntire Brass Works (*p. 473*)
Wooster Brass Co. (*p. 460*)

Fog and Vapor

Akron Brass Mfg. Co., Inc. (*p. 405*)
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Buckeye Iron & Brass Works (*p. 466*)
Elkhart Brass Mfg. Co. (*p. 401*)
Excelsior Brass Mfg. Co. (*p. 485*)
Fire Appliance Co. (*p. 463*)
Fog Nozzle Co. (*Back Cover*)
Rockwood Sprinkler Co. (*p. 411*)
Wooster Brass Co. (*p. 460*)

Heavy Stream

Akron Brass Mfg. Co., Inc. (*p. 405*)
American LaFrance-Foamite Corp. (*p. 390-391*)
Campbell-Hausfeld Co. (*p. 482*)
Elkhart Brass Mfg. Co. (*p. 401*)
Excelsior Brass Mfg. Co. (*p. 485*)
Fire Appliance Co. (*p. 463*)
Goodall Rubber Co. (*p. 402*)
F. N. McIntire Brass Works (*p. 473*)
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Rockwood Sprinkler Co. (*p. 411*)
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Pipes, Ladder

Akron Brass Mfg. Co., Inc. (*p. 405*)
American-LaFrance-Foamite Corp. (*p. 390-391*)
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Shut-Off

Akron Brass Mfg. Co., Inc. (*p. 405*)
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Spray

American-LaFrance-Foamite Corp. (*p. 390-391*)
Elkhart Brass Mfg. Co. (*p. 401*)
D. B. Smith & Co. (*p. 393*)
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OXYGEN REVIVING APPARATUS

Aspirators

E & J Mfg. Co. (*p. 395*)
J. H. Emerson Co. (*p. 477*)

For information about products of any manufacturer not listed above, write to Readers' Service Dept., FIRE ENGINEERING, 24 West 40th St., New York, N. Y.

Manufacturers' Announcements

(*Continued from page* 486)

Sac City, Iowa, Fire Department for ten years and also is a member of the International Association of Fire Chiefs.

Chief Sinclair stated that this honor was bestowed on Chief Montgomery in appreciation of the assistance and advice given by him in the building up of the Department and equipment to its present efficiency.

Conservation of Industrial Rubber Products

A forty-eight page illustrated book on conservation of rubber products in industry has been published by the United States Rubber Company.

All rubber products now in use by industry are essential to war production, and will become increasingly difficult, if not impossible, to replace.

Complete and explicit suggestions are given for the proper care of these important rubber products from initial design through inventory and storage to use, maintenance, inspection and repair.

The book, "First Aid to Industry in Conserving Rubber," is completely indexed and all mechanical rubber goods are included, such as hose of all types; transmission, conveyor and elevator belts; mechanical packings; electrical tapes, wires and cables; molded and extruded rubber goods; rubber lined equipment; rubber mountings, mats and matting; printing materials; and rubber bonded grinding wheels.

Copies of the book may be secured from the United States Rubber Company, Rockefeller Center, New York.

Protective Treatment for Hose and Salvage Covers

A new treatment that protects fire hose and salvage covers against mildew and makes them waterproof has just been announced by Soilicide Laboratories of Montclair, N. J. It can be applied to these articles right in the fire station.

The treatment is unique in that it leaves the fabric soft and pliable.

The solution is applied to hose and salvage covers by a broom type of brush.

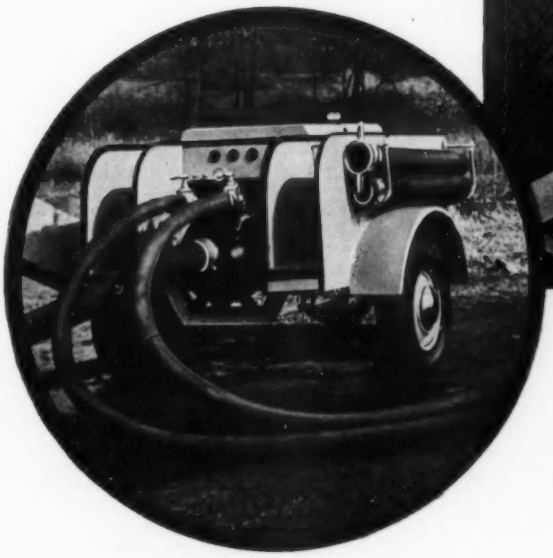
Now that the maximum life must be secured from fire hose and covers already in service, due to inability to secure replacements, this new treatment should prove of great value to fire departments.

Red Paint Traps False Alarmist

Police and firemen at New Britain, Conn., now have no doubt that a culprit caught "red-handed" really means that.

On June 23 police in that Connecticut city arrested two young men on suspicion of having turned in a false alarm of fire. One of the youngster's hands showed traces of red, which wasn't lipstick by any means. The paint was matched perfectly with the color of the fire alarm box which had just been newly painted.

100%
Fire Protection *for* YOUR Community



by using

SEALAND
FIRE TRAILER PUMPERS
500-600-750 GALLONS CAPACITY

SEALAND Fire Trailer Pumper Units are properly designed and engineered throughout to assure 100% satisfactory service. They are suited to meet today's requirements as Civilian Defense Auxiliary Units, or for regular Fire Department Service.

These big husky units, amply powered, and equipped with dependable Sealand Centrifugal Pumps, are capable of pumping from 500-750 g.p.m.

BEFORE BUYING OR SPECIFYING . . . be sure to send for a copy of our latest engineering data, which will help you to choose the unit most practical for the individual needs of your community.

THE SEALAND CORPORATION 589 RIVERSIDE AVENUE, SAUGATUCK, CONNECTICUT

FIRE TRAILER PUMPERS • CENTRIFUGAL BOOSTER PUMPS • AUTOMATIC FIRE DETECTING & ALARM SYSTEMS
NAVY TYPE FIRE ALARM SYSTEMS • • • NAVY TYPE BATTLE STATION SWITCH BOXES

WHERE TO BUY

A HANDY LIST OF REPUTABLE MANUFACTURERS

FOR EASY REFERENCE WHEN YOU'RE IN THE MARKET FOR NEW FIRE EQUIPMENT

(Page number following each name refers to advertisement in this issue)

Inhalators

American-LaFrance-Foamite Corp. (*p. 390-391*)
E & J Mfg. Co. (*p. 395*)
J. H. Emerson Co. (*p. 477*)
Mine Safety Appliances Co. (*p. 388*)

Resuscitators

E & J Mfg. Co. (*p. 395*)
J. H. Emerson Co. (*p. 477*)

PORTABLE GAS ENGINES

Briggs & Stratton (*p. 494*)
United States Motors Corp. (*p. 480*)

PROTECTIVE TREATMENT FOR HOSE, SALVAGE COVERS, TARPAULINS, ETC.

Soilocide Laboratories (*p. 465*)

PUMPS

Fire Apparatus

American-LaFrance-Foamite Corp. (*p. 390-391*)
American-March Pumps, Inc. (*p. 403*)
Hale Fire Pump Co. (*p. 476*)
Peter Pirsch & Sons Co. (*Inside Back Cover*)
D. B. Smith & Co. (*p. 393*)
Sealand Corp. (*p. 489*)
Ward La France Truck Corp. (*p. 397*)
Waterous Co. (*p. 469*)

Hand

Akron Brass Mfg. Co., Inc. (*p. 405*)
American-LaFrance-Foamite Corp. (*p. 390-391*)
Buffalo Fire Appliance Corp. (*p. 412*)
D. B. Smith & Co. (*p. 393*)
Wooster Brass Co. (hydrant) (*p. 460*)

Knapsack

American-LaFrance-Foamite Corp. (*p. 390-391*)
D. B. Smith & Co. (*p. 393*)

Portable

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For information about products of any manufacturer not listed above, write to Readers' Service Dept., FIRE ENGINEERING, 24 West 40th St., New York, N. Y.

State Police Investigate Fire

New York State Police are investigating the blaze that wrecked the building housing the Sculler Safety Corporation factory in West Babylon on March 20.

The blaze started on the first floor of the stucco building formerly used as the West Babylon School, and was said to be of suspicious origin.

The fire was reported to the Babylon Fire Department shortly after 2 a.m. as the watchmen of the company were changing shifts. The building was burning fiercely when the apparatus arrived. The fire could not be brought under control, and a second alarm was sounded, bringing the Lindenhurst Fire Department and additional Babylon firemen, when the roof of the building threatened to collapse around 4 a.m.

Many thousands of dollars worth of balsam wood and cork, used in making life-belts and rafts, was destroyed by the flames.

The total damage of the fire was estimated to run into five figures. The company, which has other plants on Long Island, has large contracts with the government to supply lifebelts and rafts for the U. S. Navy. Just prior to the fire, the company had received a large shipment of balsam wood and cork for life preservers. It was this material which continued to smoulder, and occasionally break into flames, long after the fire in the building had been extinguished.

Part of the raw material in the building was taken out by firemen before the flames made entrance into the building for this purpose impossible. But the machinery in the factory was a total loss.

Hotel Fire Fatal to Six

Six persons died and two were badly burned in a fire that swept through the Hotel Elanor in Akron, Ohio, early this year. About eighteen other residents of the hotel, which occupies two floors of a three-story brick building, reached safety by descending fire escapes and ladders or by leaping to the street.

The fire was Akron's worst since Christmas morning, 1928, when six lives were lost in another hotel fire. Five of the six deaths were atributed to suffocation, the sixth to injuries sustained in a jump from a third floor window.

The hotel, which has twenty-seven units, mostly single rooms, is reached by one entrance. The building was said to be from sixty to seventy years old.

The fire was believed to have started in a closet under the stairs leading from the second to the third floors. The flames spread so rapidly in the structure that when firemen arrived they found the stairway to the third floor inaccessible.

A fire escape leading to the street refused to function, and those marooned reached the street by jumping to the shoulders of a policeman and a bread truck driver who stood below the ladder.

At least ten of the residents of the hotel were led to the fire escape, later put in working order.

Firemen carried several persons to safety, but the flames spread so rapidly that by the time they arrived and got their ladders up, some of the third floor occupants already were trapped.

★

Whatever your needs may be in Emergency Defense Equipment, you can count on Maxim to deliver the goods.

For over 50 years the MAXIM MOTOR CO. has been supplying fire departments with dependable motor driven apparatus. We now stand ready to meet all your requirements in the Emergency Defense Equipment field.

We are ready to do our part in speedily equipping America to meet all emergencies from within and from above.

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MAXIM MOTOR COMPANY
MIDDLEBORO, MASS.

WHERE TO BUY

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For information about products of any manufacturer not listed above, write to Readers' Service Dept., FIRE ENGINEERING, 24 West 40th St., New York, N. Y.

Trombley Heads up Fire Defense in Upper Peninsula

Chief Frank F. Trombley of the Sault Ste. Marie, Mich., Fire Department has been appointed Chief Fire Director for Civilian Defense of the Seventh District of Michigan, which embraces the entire Upper Peninsula.

Appointment was made by Captain Donald S. Leonard, Chief for the State of Michigan, at the suggestion of Oscar G. Olander, Commissioner of Public Safety.

It will be the duty of Chief Trombley to coordinate the fire fighting activities for the civilian defense system for the entire Upper Peninsula.

Fire at Air Base Kills Eleven

Ten soldiers and a civilian fireman died at the Army Air Force advanced flying school at Stockton, Calif., near midnight June 3 when fire, preceded by an explosion, raged through a large building on the reservation.

Origin of the fire and explosion was not immediately known and later findings of an Army investigation were not made public.

Thomas Sousa, attached to the field's fire department, and nine of the soldiers died during or shortly after the blast. The eleventh man died later from burns suffered in the blaze. In addition, nine other men were injured, four of them critically.

Stockton's fire department and corps of nurses and doctors were rushed to the scene of the tragedy.

Fire Chief M. H. Bouchard of the field's fire department was among those injured in the blast.

Many of the injured soldiers were hurt while aiding the field fire department in its battle against the flames.

BOB GREENOCK.

A Queer Fire

Some time during Monday night, May 4, a mysterious fire caught an inner spring mattress in the George Sexton home in Abilene, Kan., and smoldered throughout the night, filling the house with smoke. Every article of furniture, all floors, walls and clothing were badly damaged by the smoke. Fire Chief C. G. Lipps, who examined the house, said a "short" in a double electric light socket located near the bed probably had caused an arc that ignited a lace curtain that was hanging with the double socket alongside the window. The socket was badly charred on the inside. There were thirty ampere fuses in the fuse box, but none was blown out.

Mr. Sexton had left for Chicago and Mrs. Sexton had decided to spend the night with a neighbor. Mrs. Sexton locked all the doors and windows, making the house nearly air tight. It was this fact that prevented the fire from spreading and destroying the entire structure. When she returned to her home in the morning she was alarmed by the fact that heavy smoke was pouring from the house from the doors and windows. She examined the house and discovered that the mattress had just about burned up.

There was considerable lightning during the night. In fact, it had struck a house two blocks from the Sexton home, but there was no trace of lightning striking the Sexton house. Close examination was made to determine if anyone had entered the house, but there were no indications to that effect.

The Cause of the Fire in This Mattress Is Unknown

One unofficial report said the explosion and resulting fire was caused by accidental ignition of gasoline fumes. The men, this report said, were uncrating a number of guns and removing a heavy protective grease from them with gasoline. This report, however, was unconfirmed by authorities from the base.

California State Highway patrolmen sirened their way from San Francisco's Red Cross blood bank bearing flasks of the precious fluid to help save the lives of the injured.

★ ★

REMEMBER "Pearl Harbor"

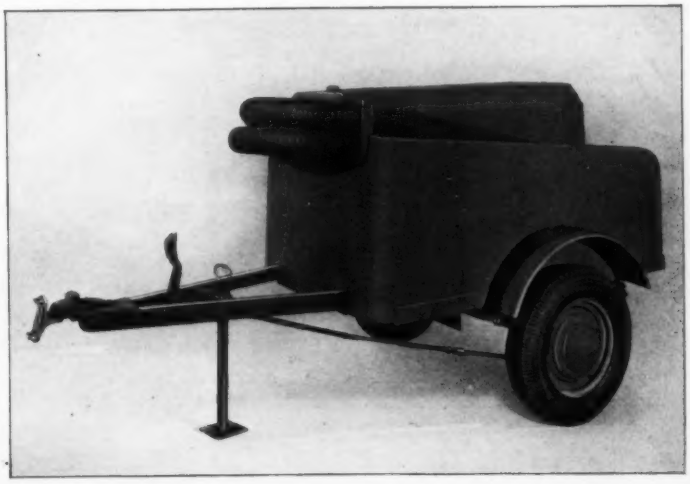
Don't wait for a stab in the back!

★ ★

Carter Fire Fighters are proven equipment, and are well beyond the design and engineering stage. Actually, they have been in production for over two years, and during this time many have been shipped on emergency orders to the far parts of the globe.

DEPENDABLE trouble-free operation is built into every Carter Fire Fighter, regardless of size. They are equipped with a Carter Self-priming Centrifugal Pump in use for fire and bilge pump service on marine work.

They are the ideal unit for Civilian Defense work, as a supplemental unit for regular Fire Departments, and for Colleges, Institutions, Airports, Army Cantonments and Industrial Plants.



★ **SPECIFICATIONS** ★

CARTER "CHIEF" 500-Gal. Unit

Approved by National Board of Fire Underwriters.

Pump: Carter self-priming single stage centrifugal pump. Capacity 500 G.P.M., 120-lb. pressure. Priming 100% automatic.

Engine: Carter Conversion Heavy Duty Industrial Truck Engine. Heat exchanger cooled. Develops 75 H.P. at 2400 R.P.M.

Starting: Self-starter, generator and heavy duty 17-plate storage battery.

Mounting: *2 steel disc wheels* to take customer's 6.00 x 16 pneumatic tires.

(*Note:* We are not furnishing the pneumatic tires.)

Hose Carrier: Arranged on each side of unit for carrying total of 500' 2½" fire hose and 2 12½' lengths of 4" suction hose.

Here is your opportunity to acquire one or more of these well-known fire fighting pumpers. Do not experiment—we have met the test. Carter "Chiefs" are performing superbly on many far flung battle fronts.

In addition to supplying large numbers of pumpers to the gallant forces of the United Nations we have been able to furnish them to shipyards, war plants and municipalities on the home front.

A limited number of Carter "Chiefs" are available for immediate delivery.

Write for further information today.

★ ***Remember—Fire is the dreaded weapon of the saboteur*** ★

RALPH B. CARTER COMPANY

HACKENSACK NEW JERSEY

★ *Manufacturers of CARTER FIRE FIGHTING High Pressure Trailer Units* ★

SMALL GASOLINE MOTORS HELP MAINTAIN
Vital COMMUNICATION LINES!
On the front lines, as well as behind the front, our country's war program depends a great deal on constantly keeping communications open. Here again, as in many other branches of military and civilian service, Briggs & Stratton 4-cycle, air-cooled gasoline motors ranging from 2/3 to 6 HP, play a vital role, furnishing dependable power for many uses.
Today, all the manpower and the production facilities of the Briggs & Stratton organization are devoted to the war program.
To the hundreds of thousands of civilian users of Briggs & Stratton motors we suggest that the life of the motors they now have can be prolonged — their performance kept at peak, by proper care and inspection and replacing broken or worn parts.
See your local dealer or an Authorized Service Station.
BRIGGS & STRATTON CORP.
Milwaukee, Wis., U. S. A.
BRIGGS & STRATTON

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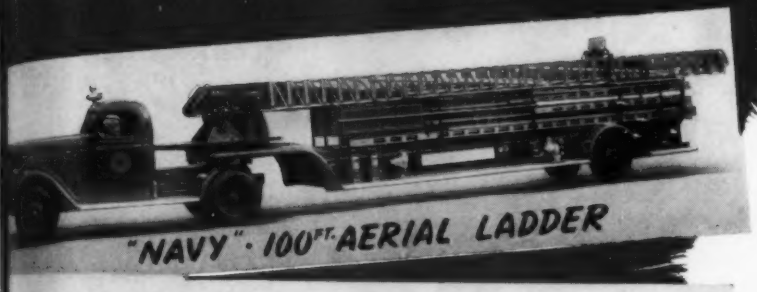
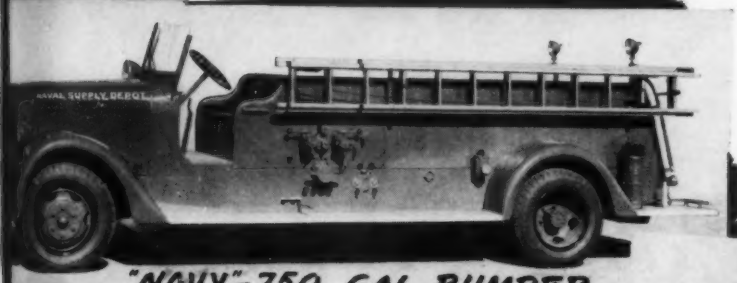
PIRSCH AERIALS AND PUMPERS

ARE SERVING THE U.S. ARMY AND NAVY



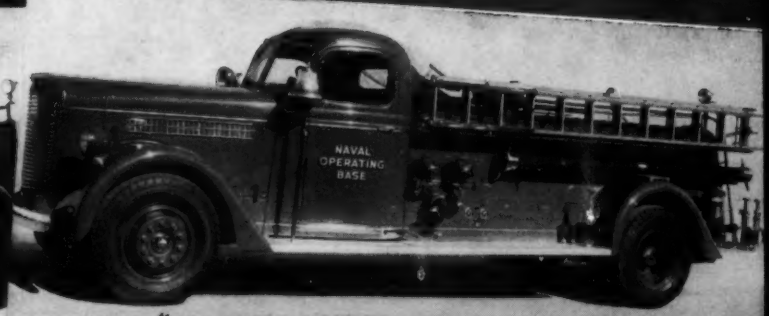
"NAVY" - 100FT. AERIAL LADDER

The firm of Peter Pirsch & Sons Co. is proud of its record in equipping the armed forces of the United States with fire engines of various types and sizes. While only a few Government units are featured here a great number have been built and delivered.



"NAVY" - 750 GAL. PUMPER

"ARMY" - 750 GAL. PUMPER



"NAVY" - 1000 GAL. PUMPER

MY" - 500 GAL. PUMPER

"ARMY" 750 GAL. PUMPER

PETER PIRSCH & SONS CO., KENOSHA, WIS.

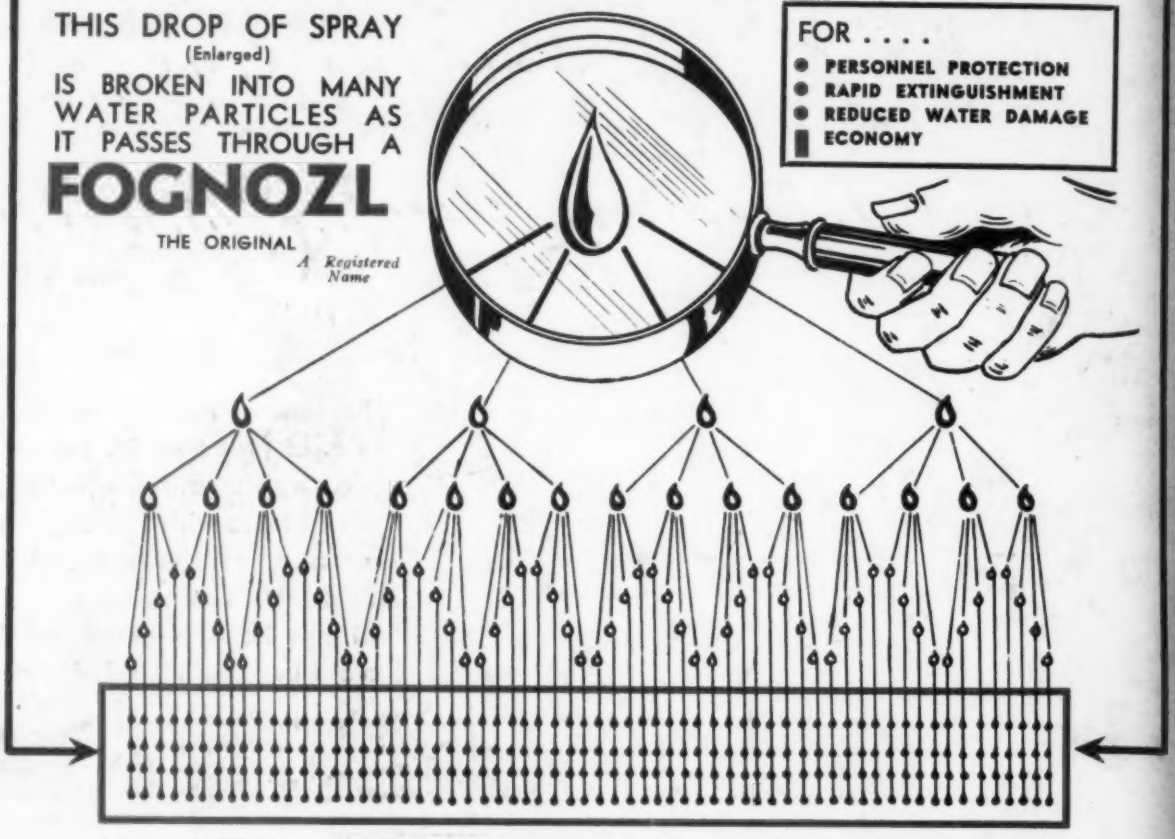
23,000,000 FIRE FIGHTERS

THIS DROP OF SPRAY
(Enlarged)
IS BROKEN INTO MANY WATER PARTICLES AS IT PASSES THROUGH A

FOGNOZL

THE ORIGINAL
A Registered Name

FOR . . . .
- PERSONNEL PROTECTION
- RAPID EXTINGUISHMENT
- REDUCED WATER DAMAGE
- ECONOMY



BY ACTUAL FOGMETER TEST THERE ARE APPROXIMATELY 23,000,000 WATER FOG PARTICLES IN ONE GALLON OF WATER EJECTED FROM FOGNOZL (at 50 lbs. pressure p.s.i.)

1" & 1½" LINES

½" TYPE B FOGNOZL

30 lbs. pressure p.s.i. and upwards

•

7 to 25 g.p.m. used on hose line

EXTENSION APPLICATOR

1" and 1½" 4AF FOGNOZL

Shut-off - Fog
Straight Stream

1" 4AF FOGNOZL . . $37.50
with Applicator . 47.50

1½" 4AF FOGNOZL . 45.00
with Applicator . 60.00

ALL FOGNOZL TIPS and APPLICATORS can be opened at the nozzle in a few seconds for cleaning with full volume of water.

CONTROLLED FOG PATTERNS - CONTROLLED WATER PARTICLES (as to Size and Density) FOR YOUR PARTICULAR JOB (Without Extra Cost)

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FOG NOZZLE OF CANADA, Ltd.
MONTREAL

FOGNOZL TIPS on the 4AF NOZZLES can be removed quickly at the nozzle for cleaning with full flow of water.